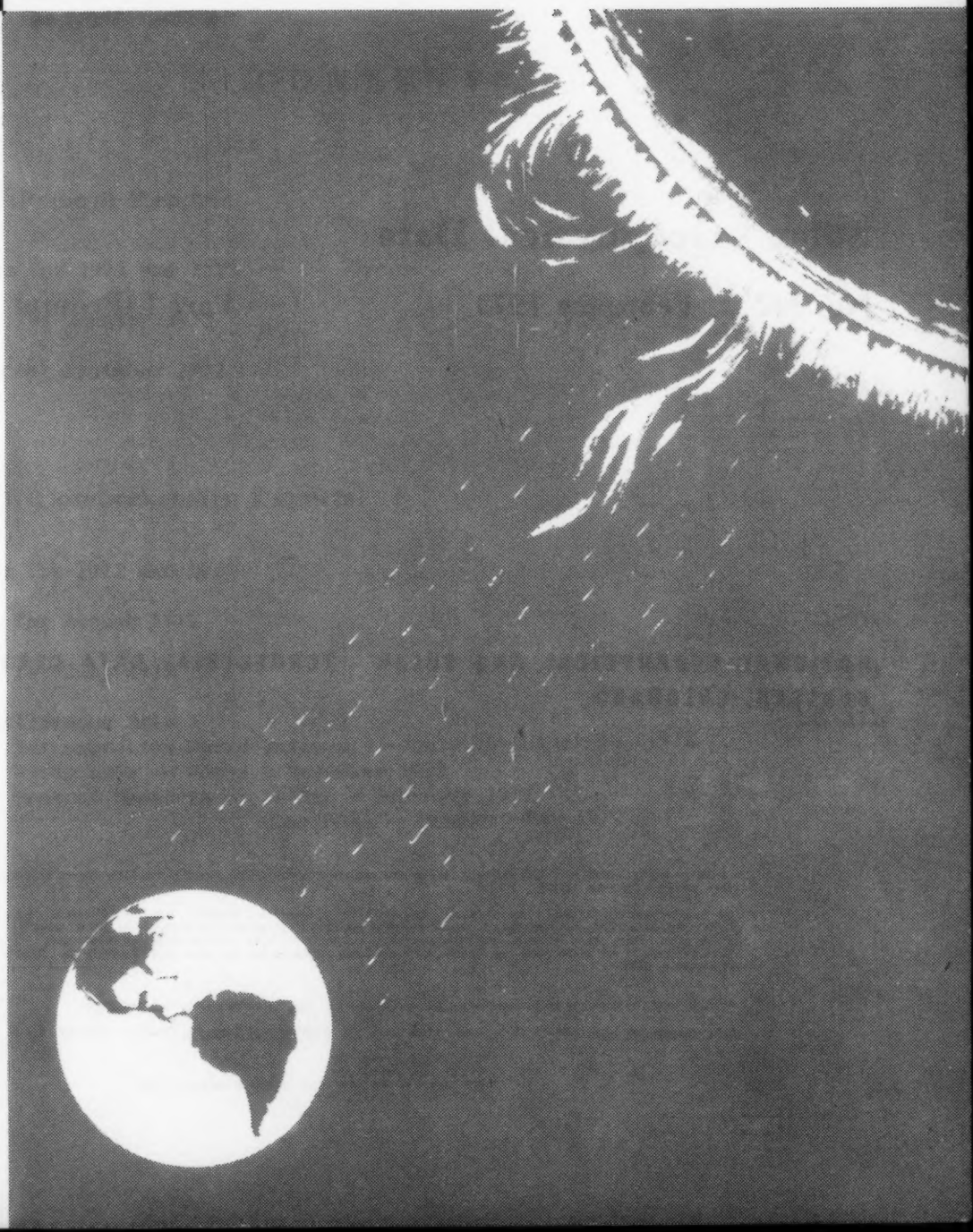
A UNITED STATES DEPARTMENT OF COMMERCE PUBLICATION

SOLAR-GEOPHYSICAL DATA
(prompt reports)

U. S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
Environmental Data Service

FEBRUARY 1973



NUMBER 342-PART I
DATA FOR
JANUARY 1973
DECEMBER 1972

U.S. DEPARTMENT OF COMMERCE
Frederick B. Dent, Secretary
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
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ENVIRONMENTAL DATA SERVICE
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Solar - Geophysical Data

No. 342 February 1973

Part I (Prompt Reports)

Data for: Jan 1973
Dec 1972

NATIONAL GEOPHYSICAL AND SOLAR - TERRESTRIAL DATA CENTER
BOULDER, COLORADO

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To standardize referencing these reports in the open literature, the following format is recommended:

Solar-Geophysical Data, CRPL-FB 135*, pages, issue date, U.S. Department of Commerce, (Boulder, Colorado, U.S.A. 80302).

*CRPL-FB 135 through 269
IER-FB 270 through 298
299 Part I or 299 Part II to number of current issue.

SOLAR - GEOPHYSICAL DATA

No. 342

Issued in two parts

Hope I. Leighton, Editor

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Solar - Terrestrial Data Services Division

CONTENTS

Part I (Prompt Reports)

	Page
Index for 1972 and 1973	2
Data for January 1973	3-20
Data for December 1972	21-114

Part II (Comprehensive Reports)

Index for 1972 and 1973	2
Data for August 1972	3-95
Data for July 1972	97-105
Miscellaneous Data	107-111
Retrospective World Interval -- July 26-August 14, 1972	
X-ray maps -- OSO-5 - November 1972	
Neutron Monitors -- Dallas - February 1972	
Churchill - February-May 1972	

INDEX FOR 1972 - 1973 DATA PUBLISHED IN "SOLAR-GEOPHYSICAL DATA"

		1972 Aug	Sep	Oct	Nov	Dec	1973 Jan
A.	Solar and Interplanetary Phenomena						
A.1	Sunspot Drawings	338	339	340	341	342	
A.2a	Zürich Provisional Relative Sunspot Numbers R_Z	337	338	339	340	341	342
A.2b	Zürich Final Sunspot Numbers R_Z						
A.2c	American Relative Sunspot Numbers R_A'	337	338	339	340	341	342
A.3a	Mt. Wilson Magnetograms	338	339	340	341	342	
A.3b	Mt. Wilson Magnetic Characteristics of Sunspots	338	339	340	341	342	
A.4	Hα Spectroheliograms	338	339	340	341	342	
A.5	Calcium Plage Drawings - McMath (or Catania)	338	339	340	341	342	
A.5a	Calcium Plage (McMath) and Sunspot Regions	338	339	340	341	342	
A.5b	McMath Daily Calcium Plage Index	338	339	340	341	342	
A.7b	Coronal Line Emission	338	339	340	341	342	
A.7c	White-Light Corona (NRL OSO-7, 1971-083A)	338	339	340	341	342	
A.7d	Solar EUV Spectroheliogram Fe XV 284 Å (GSFC OSO-7, 1971-083A)	338	339	340	341	342	
A.7e	Solar XUV Coronograms (NRL OSO-7, 1971-083A)			340	341	342	
A.8aa	2800 MHz - Daily Values of Solar Flux (ARO-Ottawa)	337	338	339	340	341	342
A.8ac	2800 MHz - Daily Values of Adjusted Solar Flux (ARO-Ottawa)	337	338	339	340	341	342
A.8g	15400, 8800, 4995, 2695, 1415, 606, 410, 245 MHz Adj. Solar Flux (AFCRL)	337	338	339	340	341	342
A.9a	9.1 cm Radio Maps of the Sun (Stanford)	338	339	340	341	342	
A.9b	21 cm Radio Maps of the Sun (Fleurs)	338	339	340	341	342	
A.9c	8.6 mm Radio Maps of the Sun (Prospect Hill)	338	339	340	341	342	
A.10a	169 MHz - Interferometric Observations (Nançay)	337	338	340	340	341	
A.10c	21 cm East-West Solar Scans (Fleurs)	337	338	339	340	341	342
A.10d	43 cm East-West Solar Scans (Fleurs)	337	338	339	340	341	342
A.10e	10.7 cm East-West Solar Scans (Ottawa-ARO)	337	338	339	340	341	342
A.11aa	Solar X-ray Radiation (Explorer 37 or 44)	338	339	340	341	342	
A.11ab	Solar X-ray Radiation (Explorer 37 or 44) Graphs	342					
A.11e	Solar X-ray Spectroheliograms (OSO-5)	338	339	340	342		
A.11f	Solar X-ray Spectroheliograms (GSFC OSO-7, 1971-083A)					342	
A.12aa	Solar Protons (Explorer 41 or 43) Daily hourly values	342					
A.12ab	Solar Protons (Explorer 41 or 43) Graphs	342					
A.12ba	Cosmic Ray Protons (Pioneers 6 & 7)	337	---	339	340	---	342
A.12bb	Cosmic Ray Protons (Pioneers 8 & 9)	337	338	339	340	341	342
A.12c	Cosmic Ray Protons (ATS-1)	337					
A.13a	Solar Wind (Pioneers 6 & 7)	337	---	339	340	341	342
A.13c	Solar Wind (Vela 6B)						
A.17	Interplanetary Magnetic Field (Pioneer 8)	---	---	339	340	---	342
A.17	Interplanetary Magnetic Field (Pioneer 9)	337	338	339	340	341	342
A.18	Interplanetary Electric Field (Pioneer 8)	---	---	339	340	---	342
A.18	Interplanetary Electric Field (Pioneer 9)	337	338	339	340	341	342
B.	Ionospheric (and Radio Wave Propagation) Phenomena						
B.51ca	High Latitude Quality Figures and Forecasts	338	339	340	341	342	
B.51cb	High Latitude Comparison Graphs	338	339	340	341	342	
B.52	Graphs of Transmission Frequency Range	338	339	340	341	342	
B.53	Quality Figures based on Frequency Ranges	338	339	340	341	342	
C.	Flare-Associated Events						
C.1a	Optical Observations Flares	337	338	339	340	341	342
C.1ba	Optical Observations Flares (Including Standardized Data)	342					
C.1d	Flare Patrol Observations	337	338	339	340	341	342
C.1e	Flare Indices (by day)	342					
C.1f	Flare Index by Region						
C.3	Solar Radio Waves - Fixed Frequencies - Outstanding Occurrences	342					
	Solar Radio Waves - Fixed Frequencies - Selected	337	338	339	340	341	342
C.3t	43.25, 80 and 180 MHz Selected Bursts (Culgoora)	342					
C.4aa	10-2000 MHz - (Fort Davis)	338	339	340	341	342	
C.4b	7.6-80 MHz - (University of Colorado)	338	339	340	341	342	
C.4d	8-8000 MHz - (Culgoora)	338	339	340	341	342	
C.4e	30-1000 MHz - (Weissenau, G.F.R.)	338	339	340	341	342	
C.4f	24-48 MHz - (AFCRL, Sagamore Hill)	338	339	340	341	342	
C.5b	Solar X-ray Radiation (Explorer 35)	342					
C.5c	Solar X-ray Radiation (Explorer 44)	338	339	340	341	342	
C.6	Sudden Ionospheric Distrubances	338	339	340	341	342	
D.	Geomagnetic and Magnetospheric Phenomena						
D.1a	Geomagnetic Indices Ci, Cp, Kp, Ap - Selected Days	338	339	340	341	342	
D.1b	27-Day Chart of Kp Indices for Year	342	342	342	342	342	
D.1c	27-Day Chart of C9 for Year	342	342	342	342	342	
D.1d	Principal Magnetic Storms	338	339	340	341	342	
D.1e	Reduced Magnetograms	342					
D.1f	Sudden Commencement and Solar Flare Effects	338	339	340	341	342	
F.	Cosmic Rays						
F.1a	Cosmic Ray Neutron Counts (Deep River)						
F.1b	Cosmic Ray Neutron Counts (Climax)						
F.1c	Cosmic Ray Neutron Counts (Dallas)	338	339	340	341	342	
F.1d	Cosmic Ray Neutron Counts (Churchill)						
F.1e	Cosmic Ray Neutron Counts (Alert)						
F.1f	Cosmic Ray Neutron Counts (Calgary)	338	339	340	341	342	
F.1g	Cosmic Ray Neutron Counts (Sulphur Mountain)	338	339	340	341	342	
H.	Miscellaneous						
H.60	IUWDS Alert Decisions	337	338	339	340	341	342
H.62	Abbreviated Calendar Record						

SGD 342 Part I (Prompt)

JANUARY 1973 DATA

Contents

	Page
Alert Period	
IUWDS Alert Periods (Advance and Worldwide)	5
Daily Solar Indices	
12-Month Tables Sunspot Numbers, R_Z, and 2800 MHz Flux Adjusted to 1 A.U.	6
Combined Table Sunspot Numbers and Solar Fluxes	7
Graph of Sunspot Cycles	8
Zürich Smoothed Observed and Predicted Sunspot Numbers	9
Solar Flares	
Flares of numerical Importance 1 or Greater	10
Subflares	11
No-Flare-Patrol Chart	12
Solar Radio Waves	
169 MHz Solar Interferometric Chart - Nancay	13
10.7 cm East-West Solar Scans - ARO, Ottawa	14
21 cm East-West Solar Scans - Fleurs	15
43 cm East-West Solar Scans - Fleurs	16
Selected Fixed-Frequency Occurrences	17-18
Spacecraft Observations	
Pioneer 6, 7 and 8	19
Pioneer 9	20

For explanations of the data contained herein see "Descriptive Text" published as supplement to February 1973 "Solar-Geophysical Data" (Number 342).

ALERT PERIODS

INTERNATIONAL URSIGRAM AND WORLD DAYS SERVICE

JANUARY 1973

JAN 1973	TIME OF ISSUE UT	ADVANCE GEOPHYSICAL ALERT	WORLDWIDE GEOPHYSICAL ALERT	
			NO.	TYPE INCLUDING FLARE ACTIVITY EXPECTED
01	0400			THREE QUIET; SOLNIL
02	0400			FOUR QUIET; SOLNIL
03	0400			N08E40 ERUPTIVE; FOUR QUIET; SOLNIL
04	0400			N08E27, N14E54 ERUPTIVE; TWO QUIET; SOLNIL
05	0400			N08E13, N14E41 ERUPTIVE; THREE QUIET; SOLNIL
06	0400			N08E00, N13E28 ERUPTIVE; TWO QUIET; SOLNIL
07	0400			N13E15, N07W13 ERUPTIVE; TWO QUIET; SOLNIL
08	0400			N13E02 ERUPTIVE; FOUR QUIET; SOLNIL
09	0400			FOUR QUIET; SOLNIL
10	0400			SIX QUIET; SOLNIL
11	0400			N08W68 ERUPTIVE; FOUR QUIET; SOLNIL
12	0400			N08W86 ACTIVE; N12W51 ERUPTIVE; THREE QUIET; SOLNIL
13	0400			N13W67 ERUPTIVE; ONE QUIET; SOLNIL
14	0400			THREE QUIET; SOLNIL
15	0400			TWO QUIET; SOLNIL
16	0400			FOUR QUIET; SOLNIL
17	0400			ONE QUIET; SOLNIL
18	0400			THREE QUIET; SOLNIL
19	0400			FOUR QUIET; SOLNIL
20	0240	BOULDER MAGSTORM BEGINS 20/0110Z 20/0240Z GRADUAL BEGINNING 19/2100Z		
	0400		20473	MAGSTORM BEGINS 20/0230Z MINOR; FIVE QUIET; SOLNIL
21	0400		21474	MAGSTORM EXISTS MINOR; FOUR QUIET; SOLNIL
22	0400		22475	MAGSTORM ENDS 21/1030Z; FOUR QUIET; SOLNIL
23	0400			FIVE QUIET; SOLNIL
24	0400			SIX QUIET; SOLNIL
25	0400			SEVEN QUIET; SOLNIL
26	0400			FOUR QUIET; SOLNIL
27	0400			TWO QUIET; SOLNIL
28	0400			ONE QUIET; SOLNIL
29	0400			THREE QUIET; SOLNIL
30	0400			FIVE QUIET; SOLNIL; STRATWARM WARM CELL OVER CENTRAL EURASIA HAS JOINED ALEUTIAN SIBERIAN SYSTEM LEADING TO SINGLE INTENSIFIED SYSTEM SLOPING NORTHWEST FROM MIDDLE STRATOSPHERE OVER NORTHEAST SIBERIA TO UPPER STRATOSPHERE OVER ASIAN ARCTIC OCEAN
31	0400			TWO QUIET; SOLNIL; STRATWARM EXISTS SIBERIA TO ASIAN ARCTIC. STRONGEST UPPER STRATOSPHERIC WARMING OVER BARENTS SEA

RELATIVE SUNSPOT NUMBERS

ZURICH, R_Z

1972 PROVISIONAL — 1973

DAY	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN
1	53	74	40	17	78	68	93	121	70	70	35	45
2	52	83	46	39	96	74	81	91	65	67	23	53
3	39	96	43	32	102	85	85	69	73	49	20	55
4	46	84	38	27	116	91	80	68	73	26	20	60
5	49	72	32	49	132	104	93	77	67	19	18	72
6	40	64	51	68	103	92	85	78	57	16	18	83
7	49	74	76	79	95	97	65	73	54	8	24	66
8	59	84	75	73	87	86	56	65	52	7	33	60
9	58	81	74	99	76	75	59	57	30	14	42	70
10	57	81	88	91	68	64	44	43	24	12	51	55
11	57	68	75	79	63	62	25	43	26	30	59	52
12	62	88	80	92	48	77	50	33	16	26	60	32
13	73	91	78	103	43	89	58	31	14	25	63	35
14	89	104	65	130	60	86	37	35	8	27	60	15
15	108	114	67	113	88	61	39	42	14	18	64	10
16	137	104	60	125	98	60	57	53	34	25	66	11
17	137	114	55	140	101	59	62	44	30	32	76	27
18	146	110	59	133	86	55	52	35	28	21	51	42
19	162	112	62	127	83	73	94	30	44	36	38	47
20	159	113	65	105	92	59	48	44	45	54	54	60
21	156	110	85	89	96	70	60	60	53	58	78	62
22	167	113	85	77	87	72	85	69	63	62	57	62
23	141	119	83	59	84	68	71	59	66	68	60	60
24	120	119	82	58	79	64	82	71	81	65	43	50
25	93	112	88	56	77	62	64	82	91	54	39	39
26	88	55	88	55	73	83	79	78	95	52	32	27
27	79	34	62	41	66	82	89	77	103	51	31	8
28	88	25	66	44	78	86	113	67	84	58	26	14
29	91	29	38	58	73	106	147	70	65	40	20	7
30		42	22	79	73	112	141	75	90	37	29	16
31		37		85		115	137		84		37	13
MEAN	91.6	84.0	64.3	78.1	83.4	78.6	73.8	61.3	54.8	37.6	42.5	42.2

1971 yearly mean = 66.6

DAILY SOLAR FLUX AT 2800 MHz
OTTAWA ARO

FLUX ADJUSTED TO 1 A.U., S_a

1972 — 1973

DAY	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN
1		125.5	96.0	95.0	126.2	133.0	156.3	144.3	114.7*	129.9	91.1	93.9
2	186.5	129.7	97.3	94.9	130.0	137.0	150.4	139.7*	108.4*	121.8*	89.4	98.2
3	184.8	131.1	98.1	97.7	137.5*	139.9	147.1*	129.4*	107.3	113.9	85.2	105.1*
4	183.6	137.1	101.0	102.7	149.5*	146.7*	146.0	122.0	103.3	115.8	82.3	109.3*
5	182.6	148.8	105.3	108.7	164.8	158.2	148.5	117.0*	100.6	102.6	88.4	113.3
6	98.6	143.7	118.1	117.6	159.1	146.1	143.4	119.2	98.4	93.2	77.8	115.0
7	102.2	143.3	121.3	120.9*	152.7	143.2	139.8*	118.4	96.1	85.7	87.1	112.3
8	104.3	141.6	123.8	128.8*	158.2*	136.7	125.3	115.9	97.2	82.5	91.6*	103.2
9	106.3	137.4	130.5	133.8	149.1*	127.1	123.8	112.9	100.5	82.3	94.7*	103.7
10	113.6*	132.5*	130.3	138.3	139.5	121.7	118.6	107.2	94.7	84.7	97.2*	103.8
11	118.4	134.9	129.8	148.8*	143.2*	123.6*	113.3*	102.7	93.5*	88.3	105.1*	102.8
12	123.9	128.5	128.3	148.6	149.7	119.3	107.4	100.6	94.7	88.7	108.9	103.5
13	126.3	129.3	128.4*	161.6	138.9*	119.9*	101.7	94.6	94.5	86.7	111.2*	108.9*
14	136.7	129.7	125.0	162.8	136.5	119.5	97.9	99.5	97.8	85.1	114.8*	96.2
15	145.8	135.3	126.0	164.6	139.5*	117.6	97.6	103.4	102.1*	86.5	116.1*	94.6
16	153.2	133.0	124.3	161.8	142.7*	115.1	100.6	103.1	106.2	89.6	110.2	93.6
17	160.2	133.8	120.3	159.3	149.6	114.6*	106.4	100.3	112.1*	91.5	111.9	94.2
18	164.4*	131.9	115.7	165.5	149.0*	108.9	109.6	102.6	111.0	94.6	112.4	95.3
19	168.6	131.8	115.4	156.7	143.2*	108.9	116.2	106.2	117.1*	99.7	113.2	94.8
20	202.5*	135.2	111.3	152.3	142.5	110.9	117.9	113.2	122.2	109.4	111.4	98.3
21	189.6*	135.8	106.9	148.2	139.8*	111.7	119.5	113.4*	132.8*	109.3*	113.4*	97.9
22	188.4*	131.2	109.4	143.3	135.1	111.6	127.3*	119.4*	141.7	110.9*	107.9*	98.5
23	175.6	140.8*	108.4	135.2	130.7	109.6	122.9*	125.2*	151.2*	115.3*	106.2	97.2
24	164.2	126.6	110.2	135.5	128.5	109.5	122.6	126.8	156.5	115.4*	101.1	96.9
25	151.9	116.4	111.6	127.3	125.5	112.4	127.8	126.3*	171.8	112.7	103.3*	99.6
26	149.3*	110.5	109.9	116.3*	120.8	120.6	137.4*	122.5*	178.0*	108.6	97.7	95.3
27	140.3	104.1	109.8*	114.3	121.9*	127.2	144.1	118.3*	167.6*	102.3	97.6	93.4
28	133.2	101.1	103.2	118.8*	127.3	133.3*	147.2*	116.4	159.1*	97.5	91.9	91.7
29	130.5*	96.5	98.6	116.2	132.4	139.1	143.3*	115.2		92.7	92.8*	91.4
30		98.3	97.8	116.8	134.5	141.2*	143.3	118.5	144.6*	95.1	92.8*	89.7
31		95.7		122.5		150.2	154.2*		148.1*		94.3	87.7
MEAN	138.4	127.1	113.7	132.5	139.7	126.8	128.9	114.9	128.2	99.7	99.7	99.0

* adjusted for burst

DAILY SOLAR INDICES

JANUARY 1973

JAN 1973	YEAR DAY	BARTELS 27-DAY CYCLE NUMBER	SUNSPOT NUMBERS		OBSERVED FLUX	SOLAR FLUX ADJUSTED TO 1 A.U.								
			R_Z	$R_{A'}$	OTTAWA 2800	AFCRL 15400	AFCRL 8800	AFCRL 4995	OTTAWA 2800	AFCRL 2695	AFCRL 1415	AFCRL 606	AFCRL 410	AFCRL 245
1	1	1	45	35	97.1	520	263	135	93.9	91.3	64.8	43.9	20.9	10.4
2	2	2	53	60	101.6	525	271	135	98.2	94.6	70.2	44.3	21.7	8.8
3	3	3	55	58	108.7*	525	279	144	105.1*	104.0	75.5	46.6	28.0	8.6
4	4	4	60	67	113.0*	525	279	145	109.3*	106.0	76.5	47.6	22.5	7.9
5	5	5	72	70	117.2	531	278	147	113.3	109.1	77.3	47.6	25.2	11.4
6	6	6	83	85	118.9	531	290	150	115.0	112.4	82.6	54.3	56.4	63.7
7	7	7	66	64	116.1	528	285	139	112.3	108.8	83.4	57.7	48.1	34.1
8	8	8	60	66	106.7	516	280	135	103.2	101.5	79.4	53.5	47.6	15.1
9	9	9	70	65	107.2	526	283	135	103.7	101.3	80.7	51.5	30.0	15.5
10	10	10	55	55	107.3	518	279	139	103.8	100.0	79.7	50.7	28.8	8.5
11	11	11	52	47	106.3	527	282	139	102.8	98.8	76.3	50.8	29.4	10.2
12	12	12	32	27	107.0	538	288	140	103.5	98.9	74.2	53.3	31.6	9.9
13	13	13	35	23	104.3*	528	289	142	100.9*	99.1	74.8	53.4	30.0	9.7
14	14	14	15	17	99.5	520	278	134	96.2	92.5	72.9	51.0	24.0	9.0
15	15	15	10	12	97.8	520	278	135	94.6	91.1	70.1	50.0	24.0	9.2
16	16	16	11	15	96.9	517	272	132	93.8	88.4	70.4	51.0	24.0	9.0
17	17	17	27	32	97.3	522	274	133	94.2	90.8	70.9	53.2	24.2	8.7
18	18	18	42	43	98.5	525	274	133	95.3	93.5	71.9	53.7	25.0	8.9
19	19	19	47	41	97.9	522	275	133	94.8	90.4	70.3	49.2	24.5	8.6
20	20	20	60	45	101.5	516	273	134	98.3	92.9	73.0	52.3	24.4	8.7
21	21	21	62	46	101.1	523	278	134	97.9	93.3	69.3	50.2	28.3	9.0
22	22	22	62	55	101.6	521	281	135	98.5	94.7	72.9	49.1	22.8	8.4
23	23	23	60	47	100.3	530	277	136	97.2	93.3	71.0	47.8	22.3	8.3
24	24	24	50	46	100.0	536	279	134	96.9	92.7	71.0	47.1	22.4	8.3
25	25	25	39	27	98.7	527	282	132	95.6	93.1	68.5	47.3	22.3	8.1
26	26	26	27	15	98.3	528	277	133	95.3	90.5	67.1	48.4	22.3	8.1
27	27	27	8	11	96.3	527	280	130	93.4	88.7	67.6	46.2	22.0	8.2
28	28	1	14	10	94.5	528	277	129	91.7	87.5	67.7	46.1	22.9	8.7
29	29	2	7	1	94.2	515	281	128	91.4	85.5	70.9	46.4	27.2	8.8
30	30	3	16	11	92.5	517	278	129	89.7	86.7	70.1	47.3	26.9	8.9
31	31	4	13	7	90.3	521	282	126	87.7	84.3	70.7	48.4	27.1	9.1
MEAN			42.2	38.8	102.2	524	279	136	99.0	95.3	72.0	49.7	27.6	11.9

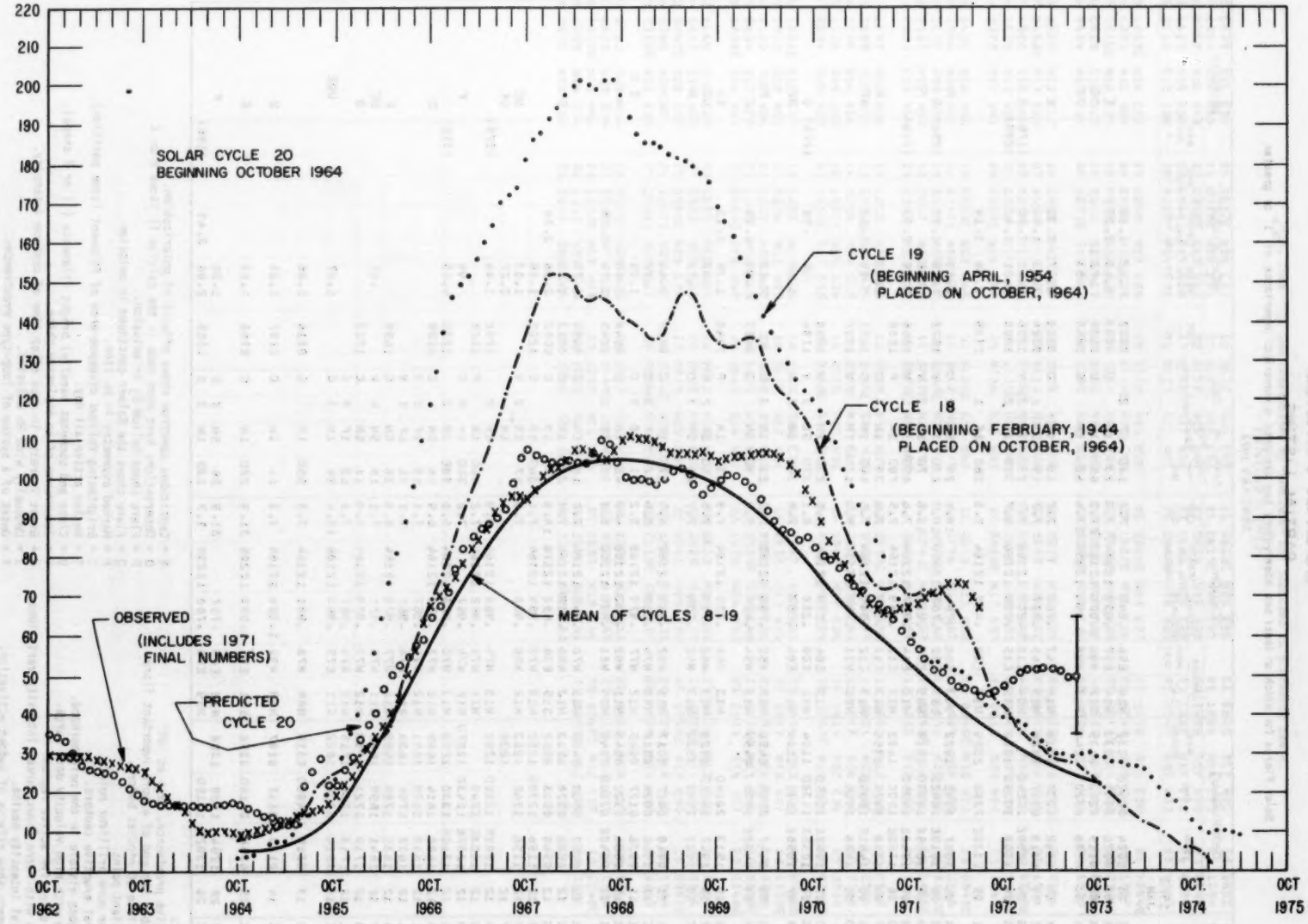
* Adjusted for burst

SMOOTHED OBSERVED AND PREDICTED SUNSPOT NUMBERS
CYCLE 20

MONTH	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.
1964	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.6	10.2	11.8
1965	11.7	12.0	12.5	13.6	14.6	15.8	15.5	16.4	17.4	19.7	22.3	24.5
1966	27.7	31.3	34.5	37.4	40.7	44.6	50.3	56.6	63.1	67.6	70.2	72.7
1967	75.0	78.8	82.2	84.6	87.4	91.3	94.1	95.3	95.3	95.0	97.1	100.6
1968	102.6	102.9	104.7	107.2	107.6	106.6	105.2	104.8	107.0	109.9	110.6	110.1
1969	110.0	109.6	108.0	106.4	106.2	106.1	105.8	106.4	105.4	104.1	104.6	104.9
1970	105.6	106.0	106.2	106.1	105.8	105.3	103.8	101.0	97.2	93.9	89.4	84.1
1971	80.4	77.8	74.4	70.9	68.1	66.7	65.5	65.0	66.4	67.1	67.6	69.9
1972	71.2	71.6	72.6	73.2	72.3	69.5	67.0	64.7 (5)	64.2 (7)	64.6 (9)	63.9 (11)	62.7 (13)
1973	61.3 (13)	59.5 (13)	57.4 (13)	55.1 (14)	53.4 (15)	51.4 (15)	49.8 (15)	49.0 (16)	47.2 (17)	44.6 (18)	42.0 (17)	40.0 (17)
1974	38.5 (16)	37.2 (17)	36.2 (18)	35.2 (18)	34.5 (19)	33.3 (19)	31.7 (18)	29.8 (17)	27.6 (17)	25.5 (17)	23.3 (17)	21.8 (17)
1975	20.7 (16)	19.3 (15)										

For each month, the upper figure is the observed or predicted Zürich smoothed sunspot number. The lower figure in parenthesis is the corresponding absolute value of the 90% prediction interval, an indication of the uncertainty above and below the predicted number. Observed numbers are those with no prediction intervals. The observed smoothed sunspot numbers are based on final Zürich numbers through 1971.

The predicted sunspot numbers are derived from a regression analysis based on cycles 8 through 19. Tests indicate that earlier cycles are from a different statistical population. From July 1968 - February 1970 a regression analysis based on cycles 1 through 19 was used because it had not then been proven that two populations exist.



PREDICTED AND OBSERVED SUNSPOT NUMBERS

9
Jan 73

SOLAR FLARES

PARTIAL LISTING

Solar Flares for which at least one observatory has assigned a numerical importance of "1" or greater.

JANUARY 1973

OBSERV-ATORY	OBSERVED UT				LOCATION					DURA-TION	IM-POR-TANCE	OBS.		MEASUREMENTS					REMARKS
	DATE	START	END	MAX. PHASE	APPROX. LAT.	APPROX. MER. DIST.	CENTRAL DISTANCE	MCMATH PLAGE REGION	CMP DAY	MIN.		COND.	TYPE	TIME UT	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH Hα	MAX. INT. %	
	1973 JAN																		
MANI	03	0024	0042D	0032	N14	E56	.849		7.2	18D	SF	2		0032	.62	1.09			
MITK	03	0026	0049	0033	N14	E57	.858	12164	7.3	23	1N		C	0033	1.13	2.20			E
MITK	03	0115	0220	0135	S17	W90	1.000	12153	27.3	65	1N		C	0135	.72				DG
MITK	03	0238	0320	0240	S17	W90	1.000	12153	27.4	42	1N		C	0240	.83				DG
MITK	04	0312	0330	0318	N14	E47	.763		7.7	18	1N		C	0318	2.17	3.30			E
MANI	04	0310	0337	0324	N15	E48	.777		7.7	19	SN	1		0324	1.03	1.61			
CAPS	04	1255E	1324D		N04	E15	.267	12160	5.7	29D	1N	2	V	1256	2.50	2.60		(176)	C
CATA	04	1308	1335D	1308	N05	E15	.295	12160	5.7	35D	1B	2		1300	2.31	2.42		(209)	
MANI	05	2329E	2355	2329	N13	E20	.435	12164	7.5	26D	1F	1		2329	2.89	3.19			
TEHR	06	1017	1042	1022	S03	E49	.754		10.1	25	SN	2	C		1.09				F
CAPS	06	1019E	1042D		S03	E52	.787	12169	10.3	23D	1B		V	1022	1.70	2.90		(256)	C
ATHN	06	1026E	1033D	1029	S05	E55	.818		10.6	7D	SN	2	V		.66				F
CAPS	06	1310E	1435D		N12	E14	.357	12164	7.6	85D	1B	1	V	1356	2.20	2.30		(210)	
MEND	06	1358E	1500	1403	N13	E12	.349	12164	7.5	70D	2N		P	1200					
RAMY	06	1350	1425	1356	N13	E12	.349		7.5	35	1N	3	C		2.32				F
MCMA	06	1451E	1535D		N13	E12	.349	12164	7.5	44D	1N		C	1451	3.09	3.10			BF
MEND	06	1458	1515		N06	W11	.252	12160	5.8	17	1N		V	1300					
MEND	07	1052E	1115D		N12	E04	.279	12164	7.8	23D	1N		V	1300					
CAPS	07	1055E	1138D	1104	N11	E08	.288		8.1	35D	SB	3	V	1104	.98	.98		(275)	C
TEHR	07	1055E	1131	1104	N11	E04	.263		7.8	36D	SB	3	V		1.65				DE
TEHR	09	0447	0508	0458	N07	W52	.799	12160	5.3	21	1N	3	C		2.10				F
MITK	09	0452E	0501	0455	N11	W54	.827		5.2	9D	SN		C	0455	.93	1.50			E
MCMA	10	1913	2016D		N13	W44	.730	12164	7.5	63D	1N		P	1940	1.39	2.10			EK
RAMY	10	1917	1921D	1920	N13	W43	.719		7.6	4D	SF	2	C		.93				DE
PALE	10	1917	1943	1922	N13	W42	.708		7.7	26	SF	3	C		.72				F
MITK	11	0018	0027	0017	N11	W82	.992	12160	4.9	17	1F		C	0017	1.44				EH
PALE	11	0016	0028	0017	N08	W74	.965		5.5	12	SF	3	C		.27				
PALE	11	0036	0127	0045	N12	W77	.979	12160	5.2	51	1B	3	C		1.08				Z S
MITK	11	0036	0122	0048	N11	W82	.992	12160	4.9	46	1B		C	0048	1.86				H
MANI	11	0040E	0110D	0045	N09	W81	.990	12160	5.0	30D	1B	1		0045	1.24	3.25			
MITK	12	0458	0508	0455	N08	W70	.945	12164	7.0	18	1N		C	0455	1.75				
MITK	12	0506	0528	0513	N12	W65	.918	12164	7.3	22	1N		C	0513	1.13				D
MITK	12	0548	0603	0552	S15	E36	.602	12176	14.9	15	1B		C	0552	2.58	3.30			
MONT	12	1156	1230D	1202	N13	W72	.959	12164	7.1	34D	1B		C	1202	1.86				
RAMY	12	1158	1245	1203	N12	W65	.918		7.6	47	SB	2	V		1.03				DE
RAMY	12			1230							1N				2.27				DE
CATA	12	1200E	1200D	1200	N13	W74	.968	12164	6.9		1B	2		1200	1.44			(275)	
MEND	12	1203E	1249		N11	W71	.952	12164	7.2	46D	1N		P	1500					
ATHN	12	1207E	1243D	1207U	N12	W74	.967		7.8	36D	1N	2	C		.99				F
CATA	12	1210E	1330	1230	N13	W76	.976	12164	6.8	80D	3B	2		1230	4.63			(316)	
MCMA	12	1608	1614	1605	N12	W77	.979	12164	6.9	14	SN		C	1605					D
BOUL	12	1610	1620	1611	N12	W74	.967		7.1	18	1F	2	V						
BOUL	12	1633	1704	1634	N12	W74	.967		7.1	31	1F	1	V						
MCMA	12	1635	1705	1650	N12	W77	.979	12164	6.9	30	SN		C	1650					E
RAMY	12	1641	1659	1643	N11	W75	.971		7.1	18	SN	4	V		.28				DE
MCMA	12	1710	1721	1713	N12	W77	.979	12164	6.9	11	SN		C	1713					D
BOUL	12	1713	1726	1715	N12	W74	.967		7.2	13	1F	2	V						
PALE	12	1814	1838	1822	S12	E75	.963	12186	18.4	24	1N	3	C		1.27				UDE
MITK	13	0305	0408D	0314	N08	W78	.981	12164	7.3	55D	1N		C	0314	1.86				
MITK	14	0103	0117	0107	N13	W90	1.000	12164	7.3	14	1N		C	0107	1.03				D
MITK	25	0354E	0416D	0358	S01	E90	1.000	12205	31.9	22D	1N		C	0358	1.03				G
RAMY	28	1254	1338	1300	N10	E45	.737		31.9	36	SN	3	C		1.39				F
CAPS	28	1302E	1315D		N09	E50	.788	12205	1.3	130	1N	2	S	1305	2.00	3.40		(196)	

"Remarks":
A = Eruptive prominence, base at >90°
B = Probably the end of a more important flare.
C = Invisible 10 minutes before.
D = Brilliant point.
E = Two or more brilliant points.
F = Several eruptive centers.
G = No spots visible in the neighborhood.
H = Flare with high velocity dark surge.
I = Very extensive active region.
J = Plage with flare shows marked intensity variations.
K = Several intensity maxima.
L = Filaments show effects of sudden activation.
M = White-light flare.
N = Continuous spectrum shows effects of polarization.
O = Observations have been made in the calcium II lines H or K.
P = Flare shows helium D_3 in emission.
Q = Flare shows the Balmer continuum in emission.
R = Marked asymmetry in Hα line.
S = Brightening follows disappearance of filament (same position).
T = Region active all day.
U = Close and somewhat parallel bright filaments (|| or Y shape).
V = Occurrence of an explosive phase.
W = Great increase in area after time of maximum intensity.
X = Unusually wide Hα emission.
Y = Onset of a system of loop-type prominences.
Z = Major sunspot umbra covered by flare.

Note: Catania and Capri-S express Maximum Intensities in percent of the local undisturbed chromosphere instead of percent of the local continuum. Parentheses are used to indicate this difference.

SOLAR FLARES

Date, time (UT) and coordinates of Subflares not included in preceding table.

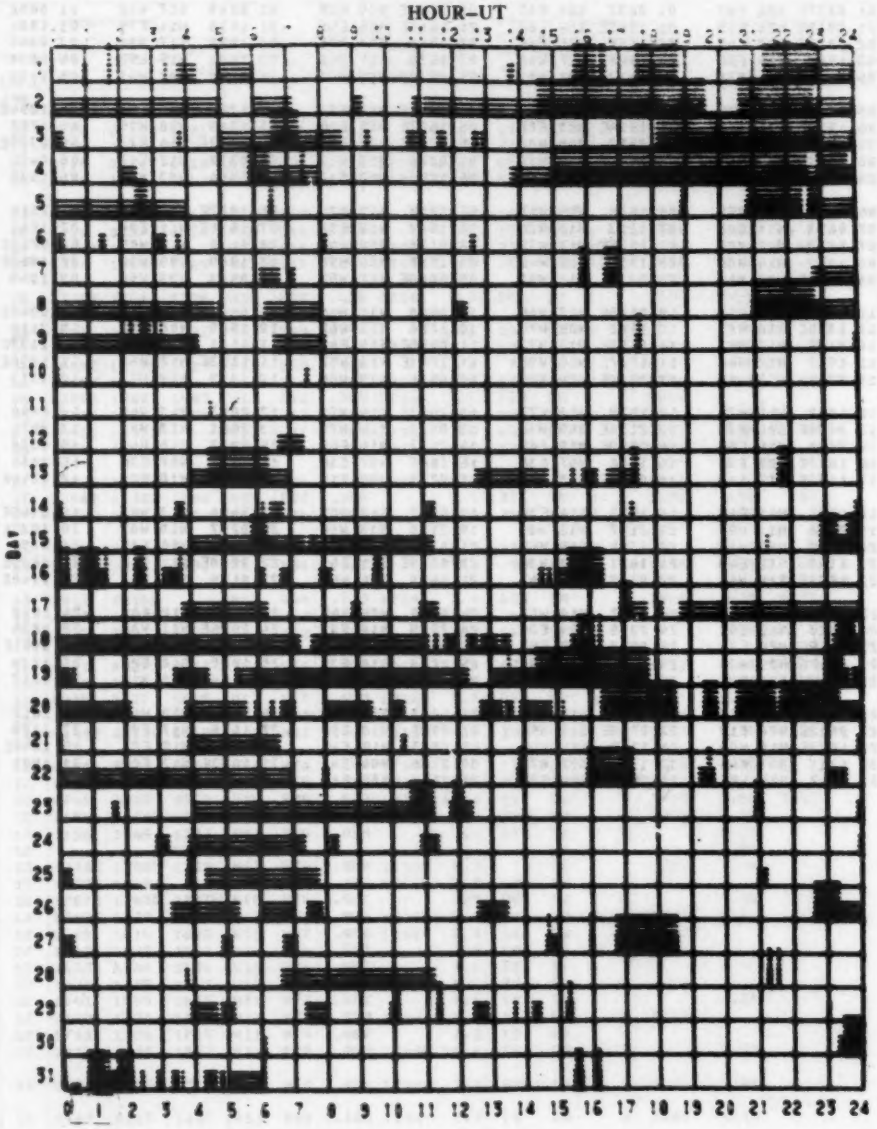
JANUARY 1973

01 0035 S11 E30	01 0837E N06 E67	01 0837 S04 E65	01 0838E N05 E65	01 0845 S17 W02	01 0852 N06 E67
01 0853 S04 E65	01 0915E N06 E55	01 1207E S04 E63	01 1619E N06 E61	01 1800 N14 E79	01 1804 N13 E72
02 0350 N06 E49	02 0808E N13 E65	02 1157 N06 E44	02 1644 S17 W88	02 1958 S17 W90	03 0845 S16 W05
03 1423 N15 E50	03 1540 N15 E50	03 1542 S17 W06	03 1630 N15 E49	03 1801 N15 E52	04 0639 N15 E45
05 0010 N13 E28	05 0033 N14 E36	05 0833 N07 W01	05 0935E N06 W02	05 0940 N07 W03	05 1125 N13 E29
05 1200E N14 E27	05 1209 N13 E29	05 1238 N14 E28	05 1241E N13 E27	05 1252 N14 E28	05 1254E N14 E26
05 1350 N11 W04	05 1502 N13 E28	05 1514E N03 E07	05 1607E N15 E26	05 1749 N08 W05	05 1757 N18 E27
05 1816E N12 E29	05 1939 N12 E29	05 2007 N08 W08	05 2009E N07 W09	05 2312E N14 E22	05 2329E N08 W04
06 0019 S13 W12	06 0020 S13 W13	06 0031 N16 W66	06 0230 N17 W68	06 0332 N12 E17	06 0434 N12 E02
06 0604 N13 E15	06 1221E S13 W47	06 1251 N12 E12	06 1255E N12 E12	06 1504 N03 W14	06 1535 N12 W18
06 1553 N13 E12	06 1801 S16 W51	06 1820 N05 W17	06 1919 N10 W20	06 1922E N10 W20	06 2114 N07 W16
07 0650E N13 E05	07 0853 N11 E05	07 1213 N10 W26	07 1508 N12 E02	07 1510E N11 E04	07 1541 N13 W06
07 1920 S18 W66	07 2232 N12 W00	07 2235E N13 W02	08 0125 N10 W40	08 0130 N13 W05	08 0710E N09 W31
08 1039 N13 W04	08 1040 N14 W05	08 1335E N06 W45	08 1817 N06 W52	08 1949 N09 W84	08 1950E N07 W45
08 2022 N07 W48	08 2303E N08 W48	09 0354 S12 W87	09 0808E N17 W57	09 0913 N09 W58	09 1049 S09 W84
10 0431 N12 W66	10 0608E N12 W66	10 0608E N12 W66	10 0640 N11 W68	10 0840E N10 W72	10 0940E N10 W73
10 0944 N09 W71	10 1315E N10 W73	10 1612 N08 W75	10 1756 N13 W67	10 1809 N08 W90	10 2118 N07 W71
10 2135 N09 W71	10 2137 N12 W67	11 0145E N10 W72	11 0556E S15 E48	11 1131 N15 W52	11 1133E N14 W53
11 1133 N15 W53	11 1517 N12 W60	11 1717E N10 W90	11 1741E N13 W57	11 1853E N12 W61	11 1858E N12 W63
11 2133 N13 W64	11 2317 N13 W65	12 0820E N14 W67	12 0824 N15 W66	12 1015 N12 W72	12 1111 S15 E33
12 1737 N14 W70	12 1810 N12 W79	12 1939 N13 W79	12 2003E N14 W69	12 2003 N13 W69	12 2006 N09 E90
12 2009 N09 E90	12 2134E S04 W35	12 2134E S05 W37	13 0938 N14 W79	13 2021 N13 W85	13 2021 N15 W82
14 2006 N14 E64	14 2008 N14 E65	14 2009E N17 E65	14 2107 N16 E60	15 0212 S18 E40	15 0320 N08 E61
15 1128 N14 E66	16 1812E N09 E34	16 1816 N07 E36	16 1845 N07 E36	16 1914 N07 E36	16 2038 N09 E33
17 0634 S18 W20	17 1152E S12 E19	18 0158E S13 E13	18 0235 N09 E19	18 0243E N10 E20	18 0244E N09 E20
18 1031E S12 E07	18 1225 N11 E16	18 1955 S18 E35	19 0157 S13 W02	19 0404 S13 W02	19 0945E N12 E04
19 1921 S12 W11	19 2136 N11 W03	19 2137 N12 W01	19 2138 S13 W14	20 0257 N10 W07	20 1025E N12 W60
20 1120 S15 W64	20 1120 N10 W12	20 1200 S15 W65	21 0154 N06 E06	21 0155 N06 E05	21 0350 S17 W77
21 0454 S17 W78	21 1149 N12 E49	21 1801 N13 W30	22 0229E S11 E48	22 0238E N11 E46	22 0629E N11 W38
22 0830E S14 W49	22 0830E S16 W48	22 0845 S14 W47	22 1420 N04 W43	23 0109 S14 W57	23 1140E S14 W64
23 1449 N10 E22	23 1651 N10 W54	24 0647 N10 W62	24 0825 N09 W64	24 1414 N12 E05	24 1610 S16 W78
24 1613 S14 W77	24 2023 N10 E00	24 2025 N09 E04	24 2025 N10 E02	24 2026E N11 W01	25 0836 N20 E36
25 0842E N20 E35	25 0855E N20 E34	25 0938 N09 E90	25 0941 N05 E90	25 0945E N10 E90	25 0951E N10 E90
25 1246 N08 W01	25 1247E N09 W01	25 1250E N10 E03	25 1720 S10 E31	25 1720 S10 E28	25 1739 S11 E30
25 2105E S11 E28	25 2106E S09 E27	25 2106E S09 E27	25 2115E S09 E27	26 0056 N11 W13	26 0213 N11 W13
26 0213 N10 W14	26 0214 N09 W15	26 1217 N10 W12	26 1223 N11 W13	26 1402 N08 W15	26 1615 S10 E15
26 1620 S10 E14	27 0612E N70 E12	27 0749E S17 W50	27 0927 N10 E69	27 1116 N17 E07	27 1120 N18 E07
28 1012E N19 W06	28 1023E N18 W08	28 1257 N11 W46	28 1833 N10 E44	30 0247E N12 E27	30 1240E N09 W75
30 1305 N04 E44	30 1310 N01 E44	30 1734 N07 W77	30 2136 N04 E41	31 1453E N12 E07	31 1901 S04 E68
31 2032 N11 E05	31 2047 S08 E84	31 2048 S04 E87	31 2218 S08 E83		

INTERVALS OF NO FLARE PATROL OBSERVATION

FOR PRECEDING SOLAR FLARE TABLE

JANUARY 1973



Observatories included in total patrol:

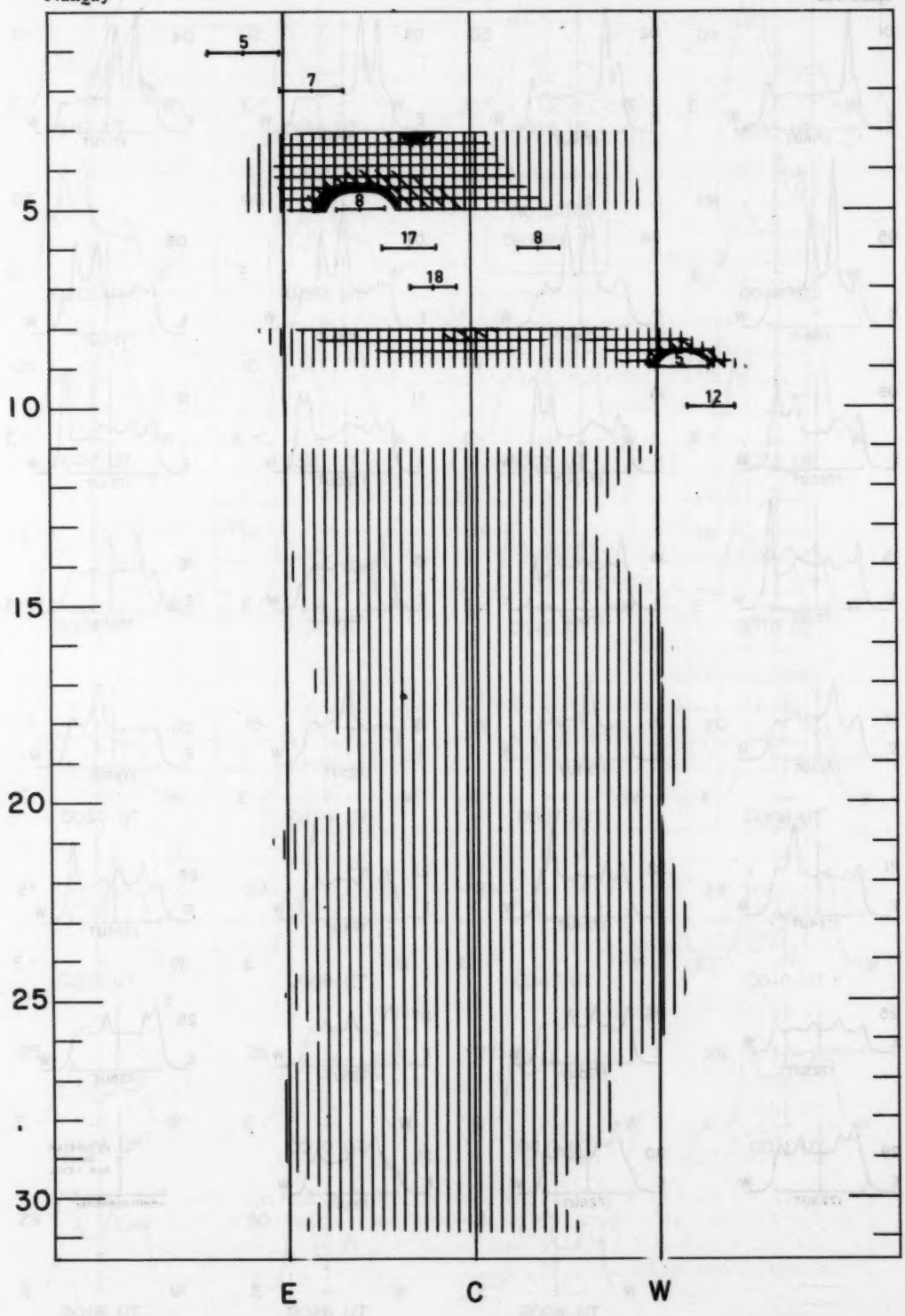
Arcetri	Catania	McMath-Hulbert	Ramey
Athenes	Herstmonceux	Mitaka	Tehran
Boulder	Istanboul	Monte Mario	Upice
Bucharest	Kodaikanal	Ondrejov	Wendelstein
Capri-S (Swedish)	Manila	Palehua	

Times of no flare patrol are shown by the shaded area for each day divided into times of no cinematographic patrol (bottom half of day) and times of neither visual nor cinematographic patrol (top half of day).

SOLAR RADIO EMISSION
INTERFEROMETRIC OBSERVATION

JANUARY 1973

Nançay 169 MHz

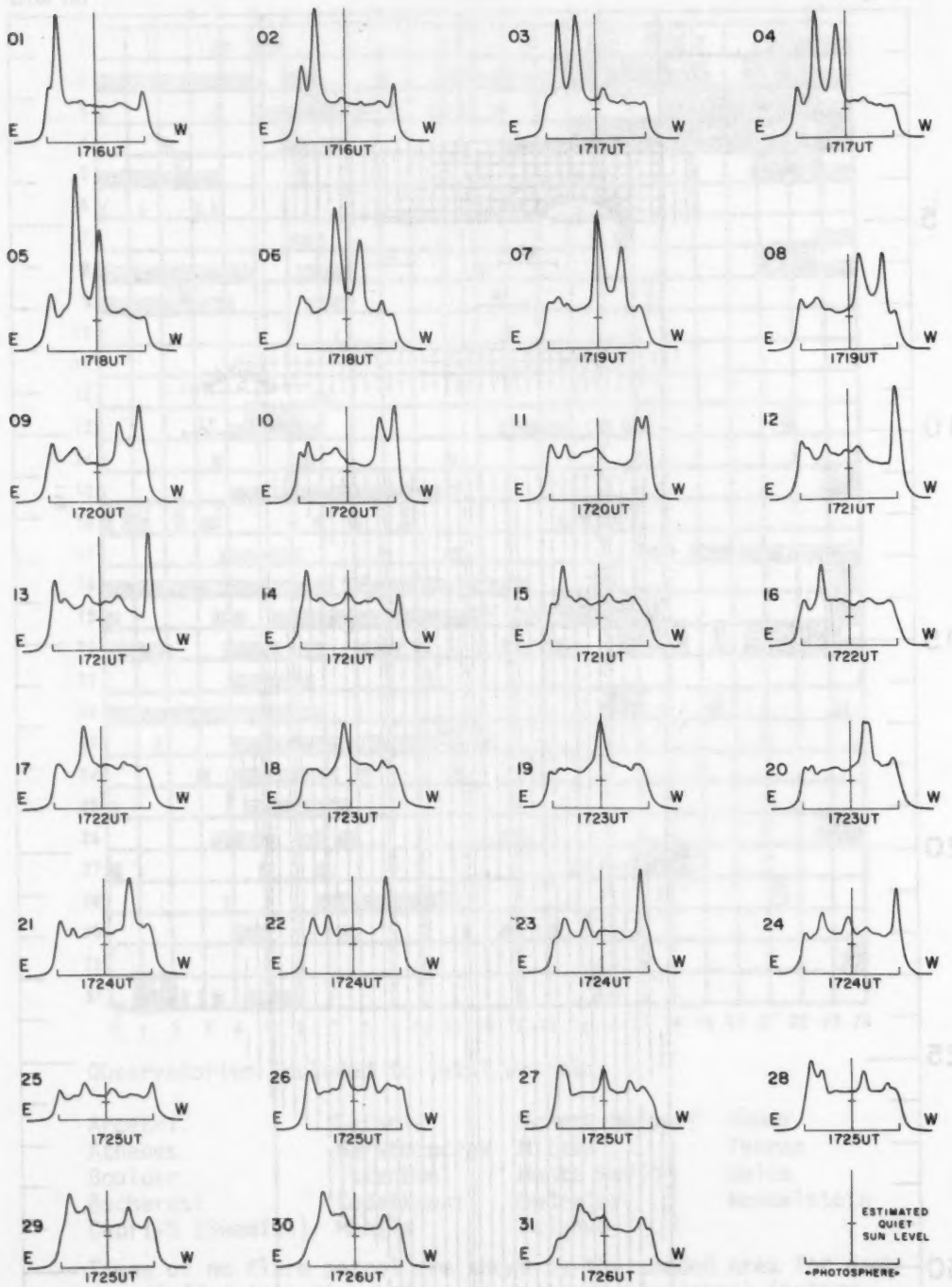


EAST-WEST SOLAR SCANS

January 1973

ALGONQUIN RADIO OBSERVATORY
CANADA

Fan-Beam with 1.5 minutes of arc
E-W Resolution



EAST-WEST SOLAR SCANS

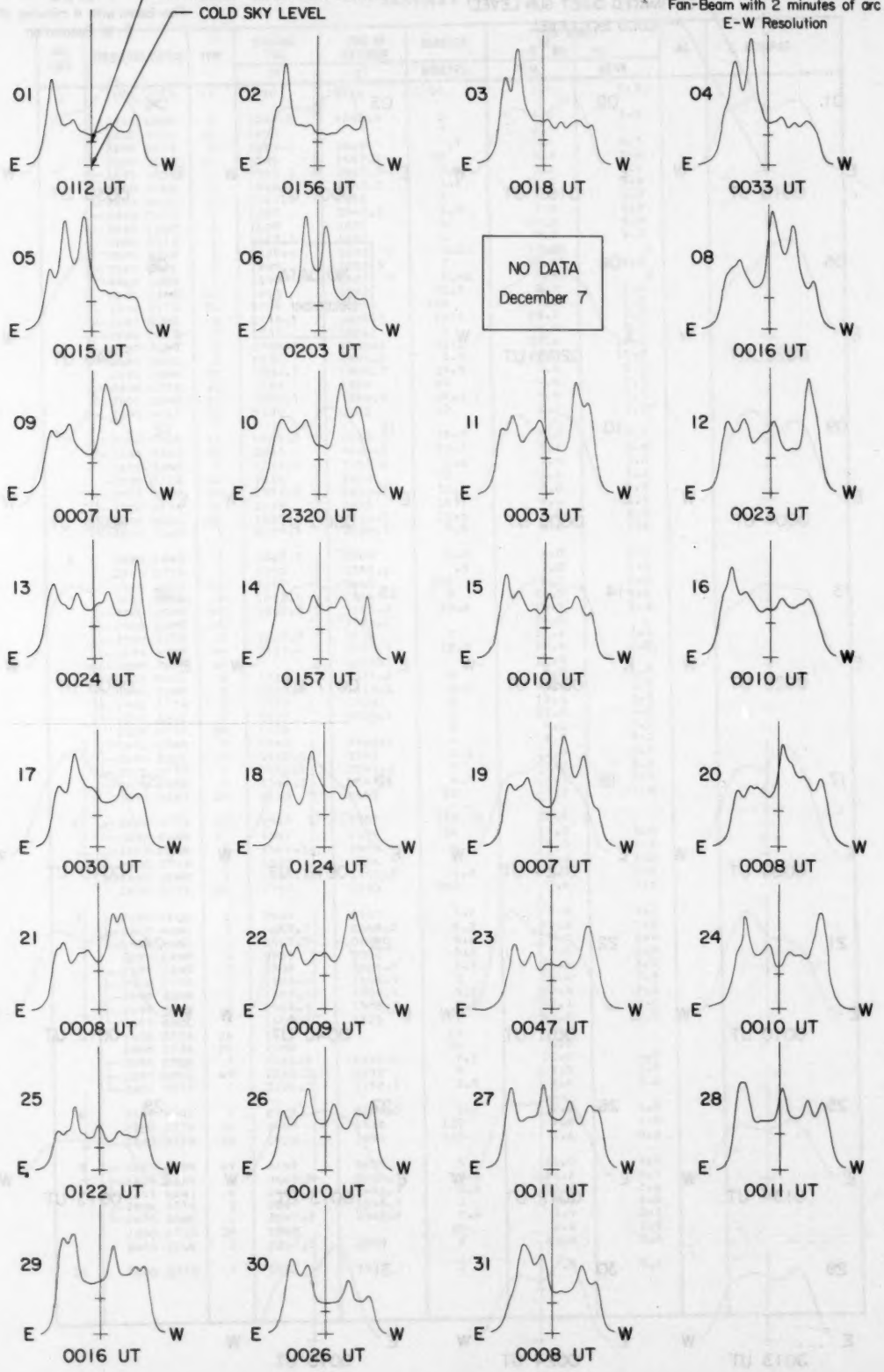
JANUARY 1973

Fleurs, Australia

ESTIMATED QUIET SUN LEVEL

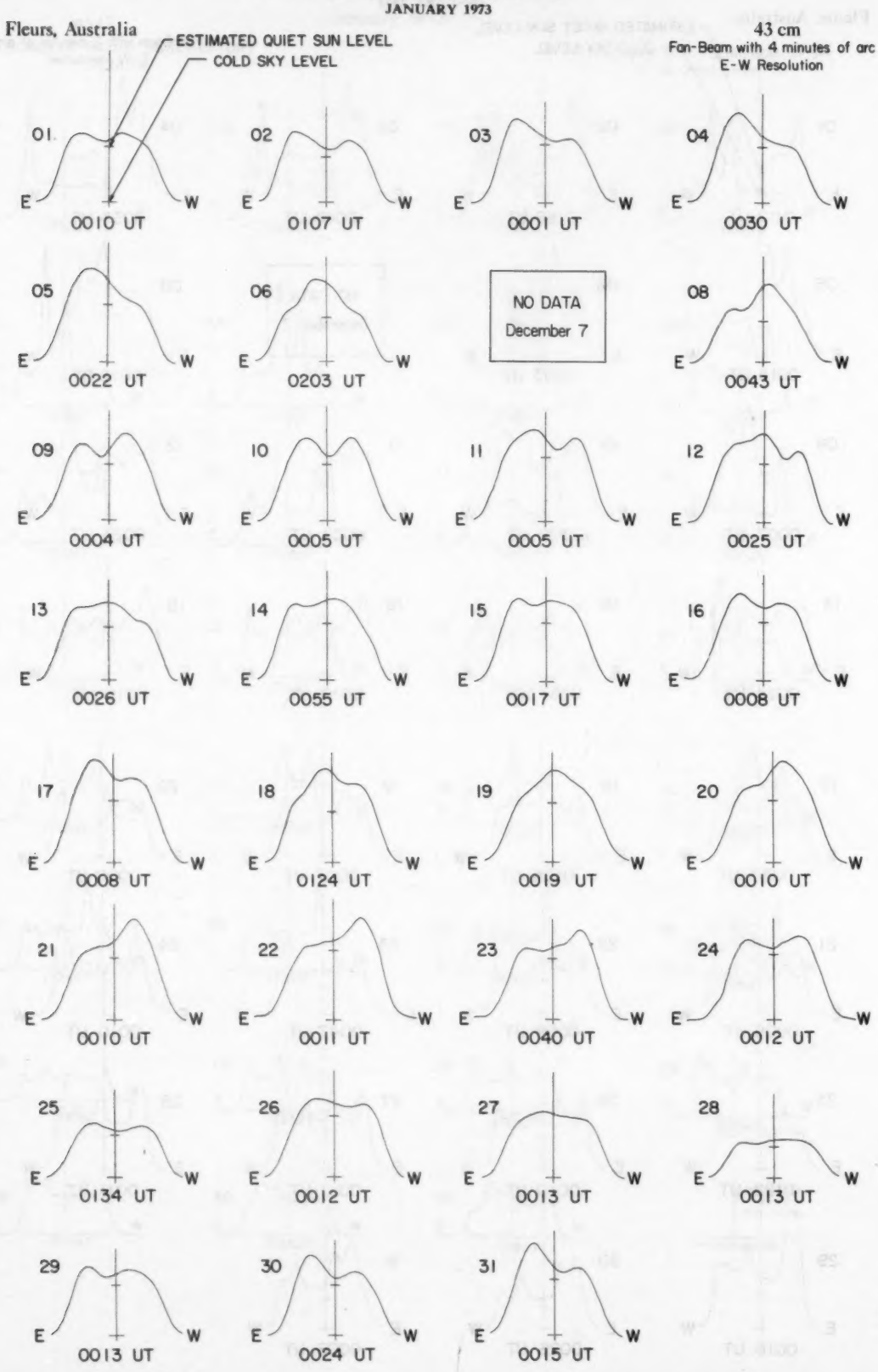
COLD SKY LEVEL

21 cm
Fan-Beam with 2 minutes of arc
E-W Resolution



EAST-WEST SOLAR SCANS

JANUARY 1973



SOLAR RADIO EMISSION
SELECTED FIXED FREQUENCY EVENTS

JANUARY 1973

JAN. 1973	FREQUENCY	STATION	TYPE	STARTING TIME UT	TIME OF MAXIMUM UT	DURATION MINUTES	FLUX DENSITY 10^{-22} Wm^{-2} Hz^{-1} PEAK	FLUX DENSITY 10^{-22} Wm^{-2} Hz^{-1} MEAN	INT	REMARKS
1	2800	OTTA	20	1430	1440	100	1.4	0.7		
3	2695	CANR	3	1242.5	1243.5	3	3.0	1.0		
	2800	OTTA	25	1420		7	2.0			
	2800	OTTA	2	1423.5	1424	.7	1.4	0.7		
	2800	OTTA	21	1535	1547.5	90	4.8	2.4		
	2695	SGMR	1	1544.2	1547.2	7.6	5.8	.8		
	8800	SGMR	3	1546.8	1547.5	1.5	11.0	3.9		
	2695	BOUL	3	1547.5	1548	1	3.0	1.0		
	2800	OTTA	1	1547	1547.5	1.5	3.8	1.9		
	2695	CANR	3	1629	1631	5	10.0	3.0		
	2800	OTTA	1	1629.5	1632	6	9.0	3.2		
	2695	SGMR	3	1629.4	1632 U	4.6U	11.3U	U		
	2695	BOUL	3	1630	1632.5	7	12.0	4.0		
	8800	SGMR	1	1630 U	1632 U	3.4U	5.8U	U		
	2695	CANR	21	1643	1647	20.5	8.0	2.0		
	2800	OTTA	21	1742	1806	130	7.0	3.5		
	2695	SGMR	3	1758.2	1801.3	10.5	26.1	8.7		
	2800	OTTA	3	1759	1801	5	24.0	9.0		
	8800	SGMR	3	1759.5	1800.5	11.1	31.0	10.3		
	2695	BOUL	3	1800	1801.5	5.5	24.0	11.0		
	2695	SGMR	29	1808.7	1808.7	15.9	2.6	1.3		
	2800	OTTA	20	1833	1839	40	4.6	2.3		
	2695	SGMR	22	1833.7	1840.2	25.3	4.5	2.3		
	2695	PENT	20	2100	2113	40	2.2	1.1U		
4	2695	CRON	45	0641.5	0643.5	15.5	8.0	2.0		
	2695	MANI	20	0643	0644.5	10.5	9.2	2.6		
	2695	SGMR	1	1255.3	1257.4	4.6	7.5	3.0		
	2800	OTTA	22	1610	1640	70	2.0	1.2		
	2695	SGMR	20	2027.8	2030.2	13.1	8.0	4.0		
	2800	OTTA	20	2028	2030	55	7.4	3.5		
	2695	BOUL	21	2029	2030.5	11.5	7.0	2.0		
	8800	SGMR	1	2029.5	2030.3	5.5	3.8	1.9		
5	2695	CANR	8	0846.5	0847	1.5	6.0	2.0		
	2800	OTTA	1	1353	1353.2	.5	2.0	1.0		
	2800	OTTA	21	1455	1605	110	3.2	2.0		
	2695	CANR	8	1512.5	1514	2	13.0	6.0		
	8800	SGMR	46	1512.8	1515.2	10.6	13.9	8.4		
	8800	SGMR	46		1520.2		33.6			
	2800	OTTA	3	1513.5	1515	3	12.4	3.1		
	2695	SGMR	46	1513.6	1514.9	15.5	10.4	3.0		
	2695	SGMR	46		1520.1		12.0			
	2695	BOUL	8	1514	1514.5	2	9.0	4.0		
	2695	CANR	3	1518.5	1519.5	6.5	16.0	5.0		
	2800	OTTA	3	1519	1520	3	13.4	9.0		
	2695	BOUL	3	1520	1520.5	2	11.0	4.0		
	2800	OTTA	29	1522		9	4.2	2.0		
	2695	CANR	8	1540	1540.5	4	8.0	3.0		
	2695	BOUL	3	1540.5	1541	1.5	7.0	2.0		
	2800	OTTA	1	1540.6	1541.2	3	5.2	1.8		
	2695	SGMR	1	1540.2	1541.1	3.7	5.7	2.0		
	2695	PENT	20	2145	2149	25	3.8	1.9U		
6	2800	OTTA	23	1340 E	1355	190 D	22.0			
	2695	CANR	21	1349	1355	34	11.0	3.0		
	2695	CANR	3	1501.5	1503	4	5.0	2.0		
	2800	OTTA	1	1503	1504	4	3.2	1.6		
	2695	SGMR	1	1503.1	1503.8	4.8	3.2	1.0		
	2800	OTTA	20	1705	1840	240	7.6	3.8		
7	2695	CRON	8	0646	0647	1.5	9.0	3.0		
	8800	MANI	3	0647.7	0648.2	6.2	13.8	5.9		
	2695	MANI	1	0647.3	0648	6.6	6.0	2.4		
	2695	CANR	3	0901	0902	1.5	5.0	2.0		
	2695	CANR	8	1508	1508.5	3.5	14.0	6.0		
	2800	OTTA	3	1508.5	1508.9	3	14.4	3.8		
	8800	SGMR	3	1508.3	1509.1	3.2	20.5	9.2		
	2695	SGMR	3	1508.4	1508.9	3.9	12.1	4.6		
	2695	BOUL	8	1509.5	1510	1	13.0	4.0		
	2800	OTTA	24	1552		13	2.4			
	2800	OTTA	26	2000		35	2.4			
	2695	CRON	3	2232.5	2233.5	2.5	10.0	4.0		
	2695	BOUL	45	2232.5	2233	9	9.0	2.0		
	2800	OTTA	1	2232.2	2232.5	2.5	6.0	3.0		
8	2695	MANI	1	0109	0109.2	1.2	2.6	1.3		
	2800	OTTA	20	1445	1518	120	2.6	1.8		
	2800	OTTA	20	1920	1955	110	1.6	0.8		
9	2695	CRON	45	0449	0450	6	11.0	3.0		
	8800	MANI	4	0449.8	0450.7	9.6	34.2	10.7		
	2695	MANI	4	0449.8	0450.7	9.9	13.2	3.6		
	2800	OTTA	1	2047	2048.5	2	8.0	4.0		
	2695	SGMR	2	2047.2	2048.5	2.6	7.4	2.5		
	2800	OTTA	29	2049		35	2.8	1.0		
	2695	BOUL	3	2247.5	2249	2	10.0	3.0		
10	2800	OTTA	1	1521	1522	2	.8	0.4		

SOLAR RADIO EMISSION
SELECTED FIXED FREQUENCY EVENTS

JANUARY 1973

JAN. 1973	FREQUENCY STATION	TYPE	STARTING TIME	TIME OF MAXIMUM	DURATION	FLUX DENSITY 10^{-22} Wm^{-2} Hz^{-1}		INT	REMARKS
			UT	UT	MINUTES	PEAK	MEAN		
	2695 BOUL	3	1715.5	1717	2.5	6.0	2.0		
	2695 BOUL	45	1801.5	1804.5	16.5	47.0	12.0		
	2695 BOUL	45	1859.5	1900.5	2	11.0	3.0		
	2800 OTTA	21	1905	1930	180	3.4	2.0		
	2800 OTTA	1	2113	2113.5	2	1.2	0.6		
	2695 BOUL	45	2132.5	2133.5	1.5	10.0	3.0		
11	2695 CRON	45	0035	0047.5	35	58.0	15.0		
	2695 MANI	22	0036.8	0048.4	25	50.0	12.2		
	8800 MANI	47	0043.6	0049.3	22.1	810.0	186.0		
	2800 OTTA	1	1637	1637.5	1	1.0	0.5		
	2800 OTTA	2	1715.5	1716.5	2.5	4.4	2.2		
	2695 SGMR	1	1715.4	1716.6	3.6	5.0	2.5		
	8800 SGMR	21	1755	1805.6	41.1	13.4	6.0		
	2695 SGMR	21	1755.8	1807	29.6	7.0	3.0		
	2800 OTTA	46	1800.5	1809	15	33.0	13.1		
	2800 OTTA	46	1800.5	1803.5	6.5	27.8			
	2800 OTTA	46	1807	1809	3.5	33.0			
	2800 OTTA	46	1810.5	1811.9	5	24.0			
	2695 SGMR	46	1800.6	1802.3	5.9	17.8	10.0		
	2695 SGMR	46		1803.6		36.6			
	2695 SGMR	46		1805.5		18.0			
	8800 SGMR	4	1801.7	1803.6	3	21.0	9.0		
	8800 SGMR	4	1805.6	1809.2	9.4	360.0	100.0		
	2695 SGMR	46	1807.3	1809.1	7.4	21.8	7.0		
	2695 SGMR	46		1811.8		14.0			
	2800 OTTA	29	1815.5		12	2.0	0.7		
	2695 SGMR	1	1857.8	1900	3.6	6.8	3.4		
	2800 OTTA	2	1858.9	1900	2.5	8.0	2.0		
	8800 SGMR	1	1859.3	1900.1	2.2	2.5	1.2		
	2695 PENT	45	2131.9	2132.6	2	7.8	3.9U		
12	2695 CANR	3	1139.5	1140	1	4.0	1.0		
	2695 CANR	3	1153	1153.5	1	3.0	1.0		
	2695 CANR	3	1157.5	1158.5	1.5	7.0	2.0		
	2695 CANR	3	1208.5	1210	5	12.0	5.0		
	2800 OTTA	21	1715	1828	160	2.8	1.4		
	2800 OTTA	1	1743	1744	2	1.0	0.5		
	2695 SGMR	20	1820	1828.9	20.6	3.4	1.7		
	8800 SGMR	20	1821.7	1825.7	13.3	7.3	3.6		
	2800 OTTA	1	1938.5	1939.5	2.5	1.4	0.7		
13	2800 OTTA	20	1335	1410	115	4.2	2.3		
	2800 OTTA	20	1542	1750	220	4.2	2.1		
15	2695 BOUL	3	2301	2302	1.5	7.0	3.0		
18	2695 CANR	3	0822	0823	2	5.0	2.0		
19	2695 CRON	45	1040	1041.5	3.5	13.0	5.0		
	2695 BOUL	3	2135.5	2136.5	1.5	4.0	1.0		
	2800 OTTA	1	2135	2135.7	1.2	1.6	0.8		
20	2695 CANR	3	1111	1112	2	2.0	1.0		
21	2695 CANR	45	0806	0807	2.5	8.0	3.0		
	2695 CANR	3	0830	0832.5	3.5	3.0	1.0		
	2695 SGMR	1	1859.9	1900	.3	6.6	3.3		
22	2695 CRON	3	0529.5	0530	1.5	6.0	2.0		
	2695 BOUL	8	2330.5	2331	1	7.0	3.0		
23	2800 OTTA	20	1400	1430	115	2.0	1.0		
24	2695 CRON	3	0642	0643	1.5	4.0	1.0		
25	2800 OTTA	2	2103	2105	3	2.0	0.9		
	2695 BOUL	3	2104	2105.5	2	5.0	2.0		
29	2695 CANR	3	1819	1820	1.5	7.0	2.0		
30	2695 CANR	3	0805.5	0806.5	1.5	5.0	2.0		
	2695 CANR	3	0811.5	0813.5	3	6.0	2.0		
	2695 CANR	3	1809.5	1811	2.5	5.0	2.0		
31	2695 CANR	21	0915	0916	6.5	4.0	1.0		
	2695 SGMR	1	1508.7	1508.8	1.9	4.0	1.9		

Observatories:

BOUL = Boulder CRON = Carnarvon OTTA = Ottawa ARD PENT = Penticton SGMR = Sagamore Hill
CANR = Canary Islands MANI = Manila

Explanation of Type Code:

1 Simple 1 6 Minor 22 Simple 3F 27 Rise and Fall 32 Absorption 44 Noise storm in Progress
2 Simple 1F 7 Minor + 23 Simple 3AF 28 Precursor 40 Fluctuation 45 Complex
3 Simple 2 8 Spike 24 Rise 29 Post Burst Increase 41 Group of Bursts 46 Complex F
4 Simple 2F 20 Simple 3 25 Rise A 30 Post Burst Increase A 42 Series of Bursts 47 Great Burst
5 Simple 21 Simple 3A 26 Fall 31 Post Burst Decrease 43 Onset of Noise Storm 48 Major
49 Major +

PIONEER VI

JANUARY 1973

Date Jan. 1973	Time (UT)	ESP (°)	Solar Wind[1]		Cosmic Ray Protons[2] (particles/sec)		
			U_H+ (km/sec)	TAU (Days)	0.6-13 Mev*	13-175 Mev**	>175 Mev
21	1424	-071.8	448	-4.919	0.334	Q	Q

PIONEER VII

JANUARY 1973

Date Jan. 1973	Time (UT)	ESP (°)	Solar Wind[1]		Cosmic Ray Protons[2] (particles/sec)		
			U_H+ (km/sec)	TAU (Days)	0.6-13 Mev*	13-175 Mev**	>175 Mev
21	1617	-135.27	500	-10.2787	--	--	--

1 Wolfe - NASA/ARC
2 Simpson - University of Chicago

* Includes He 0.6-13 Mev/nucleons and electrons ~0.5 Mev - see J. Retzler and J. A. Simpson, J. Geophys. Res., 74, 9, 2149-2160, 1969 for discussion of the electron response of Pioneer VII.
** Includes He >13 Mev/nucleons.
Q used to indicate that a rate is at its quiescent level.

Note: The notes published with the March 1972 data continue to apply to the current data.

ESP = Earth-Sun Probe Angle.

PIONEER VIII

JANUARY 1973

Date Jan. 1973	Time (UT)	ESP (°)	Solar Wind[1]		IP E-Field[2]	IP Magnetic Field[3]			Cosmic Ray Protons[4] (particles/sec)	
			U_H+ (km/sec)	TAU (Days)	400 Hz (mv)	/B/ (Gamma)	ϕ (°)	Condition	>13.9 Mev	>64 Mev
22	0200	112.5	390	8.2928	0.455	8.1	322	very quiet	7.01	1.26

1 Wolfe - NASA/ARC
2 Scarfe - TRW, Inc.
3 Ness - NASA/Goddard & Mariani - Univ. of Roma
4 Webber - Univ. of N.H.

ESP = Earth-Sun Probe Angle.

PIONEER IX

JANUARY 1973

Date Jan. 1973	Time (UT)	ESP (°)	Solar Wind[1]		IP E-Field[2]	IP Magnetic Field[3]			Cosmic Ray Protons[4] (particles/sec)	
			U_{H^+} (km/sec)	TAU (Days)	400 Hz (mv)	/B/ (Gamma)	ϕ (°)	Condition	>13.9 Mev	>40 Mev
2	2000		293		0.231				6.21	1.21
3	0000	029.65	303	2.2739	0.217	5.0	355	quiet (1)	6.08	1.14
	0400		325		0.214				5.90	1.09
	1900		363		0.179				6.14	1.12
	2300		350		0.225	6.4	343	disturbed	6.35	1.29
4	0300	029.71	350	2.2772	0.171				6.20	1.17
	1400		376		0.198	5.4	038	disturbed	6.31	1.31
	1800		376		0.234				6.41	1.20
6	0000	029.82	404	2.4145	0.226	3.1	147	very disturbed	6.49	1.14
	0400		404		0.206				6.64	1.29
10	0000	029.96	630	2.2921	0.206	7.6	145	quiet	6.42	1.63
	0400		630		0.278				6.06	0.89
	1300		630		0.251				6.14	1.06
	1700		630		0.258	3.7	157	very quiet	6.24	0.97
	2100		608		0.306				6.22	1.12
12	0200	030.04	504	2.3189	0.307	3.5	126	very quiet	6.35	1.19
	1300		504		0.261				6.37	1.24
	1700		468		0.290	4.7	116	quiet	6.23	1.29
	2100		468		0.272				6.33	1.16
13	1000	030.08	449	2.3354	0.171				6.39	1.39
	1400		449		0.217	5.5	133	quiet (2)	6.33	1.21
	1800		449		0.179				6.42	1.30
14	1000	030.11	404	2.1637	0.163				6.38	1.26
	1400		417		0.191	5.6	139	very quiet	6.51	1.28
	1800		404		0.171				6.47	1.23
16	0500	030.17	350	2.1377	0.206	6.1	103	very quiet	6.30	1.23
	1300		325		0.216				6.54	1.09
	1700		325		0.245	6.2	158	quiet	6.53	1.11
	2100		338		0.214				6.52	1.26
17	2100		376		0.226	8.6	337	very quiet(3)	6.22	1.06
18	0100	030.21	449	2.3761	0.222			disturbed (4)	6.23	1.26
	1000		449		0.155				6.34	1.14
	1400		449		0.148	7.1	343	quiet (5)	6.18	1.21
	1800		430		0.171				6.38	1.15
19	1000	030.23	430	2.3891	0.171				6.35	1.14
	1400		449		0.203	4.8	297	very quiet	6.10	1.16
	1800		404		0.206				6.23	1.10
21	1000	030.25	404	2.4037	0.233				6.05	1.21
	1400		404		0.215	17.4	310	very quiet	5.9	1.19
	1800		430		0.203				6.1	1.13
26	1000	030.24	564	2.4063	0.258				5.95	1.14
	1400		542		0.267	6.0	004	very quiet	6.0	1.10
	1800		504		0.269				6.08	1.04
27	1000	030.22	504	2.4283	0.261				6.16	1.27
	1400		486		0.206	3.3	192	quiet (6)	6.04	1.13
	1800		468		0.187				6.14	1.17
28	1000	030.20	449	2.4481	0.164			disturbed (7)	6.15	1.09
	1400		404		0.187	4.4	323	quiet (8)	6.17	.98
	1800		449		0.171				6.11	1.19

[1] Wolfe - NASA/ARC
[2] Scarfe - TRW, Inc.
[3] Sonett and Colburn - NASA/ARC
[4] Webber - Univ. of N.H.

ESP = Earth-Sun Probe Angle.

Notes:
1 With one Field Reversal at 0227 UT
2 With one Field Direction Reversal at 1903 UT
3 Very quiet and inward 1925 thru 0130 UT
4 0136 UT thru 0230 UT
5 With three Field Direction Reversals at 0953, 1015 and 1018 UT
6 With three Field Direction Reversals at 1035, 1740 and 1910 UT
7 1000 thru 1300 UT
8 1300 thru 1920 UT

Note: Possible Pioneer 9/10 Spiral Alignment Occurrences at various Nominal Solar Wind Velocities:

U_{H+} (km/sec)	Date (of Alignment)
300	15 February 1973
400	27 December 1972
500	09 November 1972

DECEMBER 1972 DATA

Contents

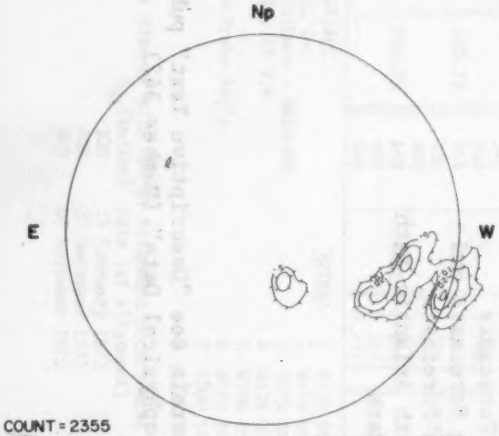
	Page
Daily Solar Activity Centers	
X-ray, 8.6 mm, 9.1 cm and 21 cm Spectroheliograms, Magnetograms, Calcium Plages, Hα Spectroheliograms, Sunspots, Corona and EUV Spectroheliograms	22-83
Individual Regions of Solar Activity	84-89
Daily Calcium Indices	89
Solar X-ray Radiation	
Naval Research Laboratory - Explorer 44	90-92
Sudden Ionospheric Disturbances	
Table of Events	93
Number of Events in each Plage Region	94
Solar Radio Waves	
Spectral Observations	95-100
Selected Events by Radioheliograph	101
Cosmic Rays	
Neutron Monitors Daily Values - Calgary, Sulphur Mountain, Dallas	102
Chart of Variations - Calgary, Sulphur Mountain	103
Geomagnetic Indices	
Table of Indices Kp, Ci, Cp, Ap	104
12-Month Table of Daily Average Ap	105
Chart of Kp by Solar Rotations	106
Chart of C9 by Solar Rotations	107
Principal Magnetic Storms	108
Sudden Commencements and Solar Flare Effects	109
Radio Propagation Indices	
North Atlantic Quality Figures and Forecasts	110
Charts of North Atlantic Short-term Forecasts and Quality and High Latitude Advance Forecasts	111
Transmission Frequency Ranges - North Atlantic Path	112-113
Quality Indices on Germany-Canada Path	114

For explanations of the data contained herein see "Descriptive Text" published as supplement to February 1973 "Solar-Geophysical Data" (Number 342).

DECEMBER 1, 1972 (P= 16.08 B_o = 0.82 L_o = 249.72

22 Dec 72

NASA GSFC OSO-7 — X-RAY

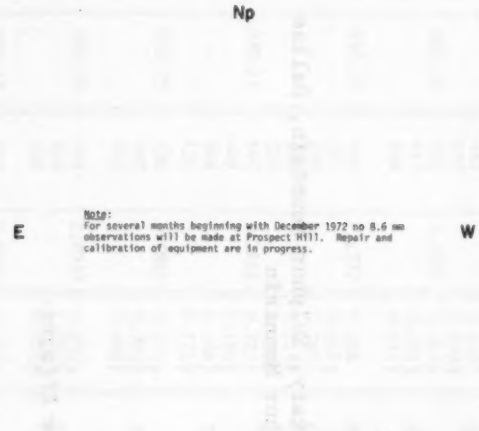


COUNT = 2355
ROLL = 106.5°
P-TH = 7.20

0144 UT

Intensities in Units of 10^{-6} ergs cm^{-2} sec^{-1}

PROSPECT HILL AFCRL — 8.6 mm

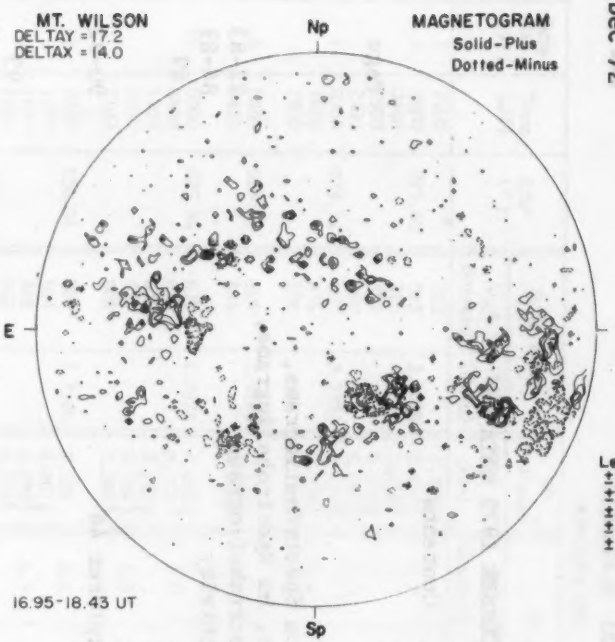


Note:
For several months beginning with December 1972 no 8.6 mm observations will be made at Prospect Hill. Repair and calibration of equipment are in progress.

Contours in Intervals of 200° K

MT. WILSON — MAGNETOGRAM

DELTAY = 17.2
DELTAX = 14.0

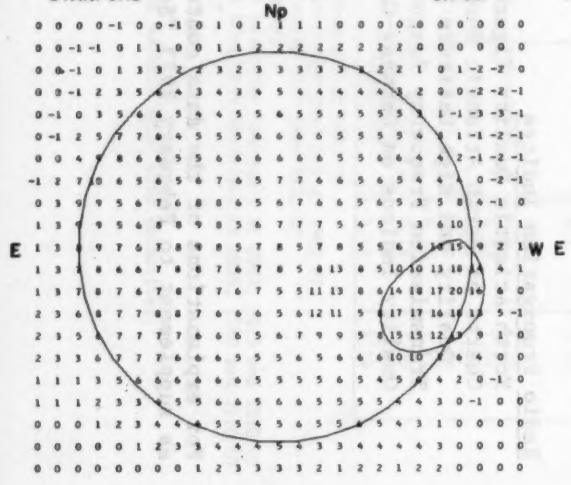


Solid-Plus
Dotted-Minus

Levels
±5
±10
±20
±40
±80

16.95-18.43 UT

STANFORD — 9.1 cm



20-21 UT

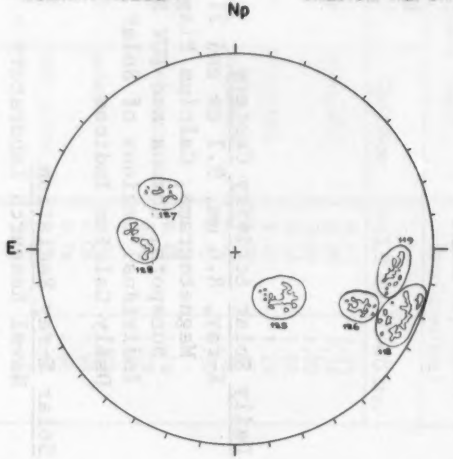
Brightness Unit 5,000° K

FLEURS, AUSTRALIA — 21 cm

02-03 UT

Resolution 3 Minutes of Arc
Brightness Unit 1,700° K

McMATH-HULBERT — CALCIUM REPORT



FAIR	M
18	3400 - 2.5
19	1300 - 2.5
25	1200 - 2.5
26	1000 - 3.0

1425 UT

20-21 UT

02-03 UT Brightness Unit 1,700° K

1425 UT

RAMEY AFB
01

Np

Hα

E

W

Sp

1219 UT

CANARY ISLAND

Np

SUNSPOTS

TWO DIAMETRAL STREAKS, ALWAYS AT 90° TO SCAN DIRECTION

E

W

119A

118A

125

126

Sp

0920 UT

CORONA
SACRAMENTO PEAK

NRL
OSO-7

Np

TV SCAN DIRECTION

WHITE-LIGHT
CORONA

E

W

SHADOW AREA CAUSED BY OCCULTER SUPPORT

Sp

2149 UT

NASA GSFC
OSO-7

Np

FE XV
284A

E

W

Sp

0201 UT

20 X 20 ARCSEC APERTURE
COUNT = 100855
ROLL = 106.50°
P-TH = 7.20

Np

NRL
OSO-7

171-630A

E

W

Sp

0157 UT
COUNT = 70580

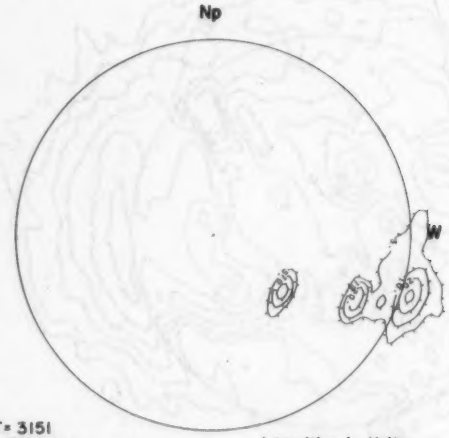
23
Dec 72

DECEMBER 2, 1972 (P= 15.69 B_o= 0.69 L_o= 236.55

24 Dec 72

NASA GSFC
OSO-7

X-RAY



COUNT= 3151
ROLL = 107.0°
P-TH = 7.21

0427 UT

Intensities in Units of 10^{-6} ergs cm^{-2} sec^{-1}

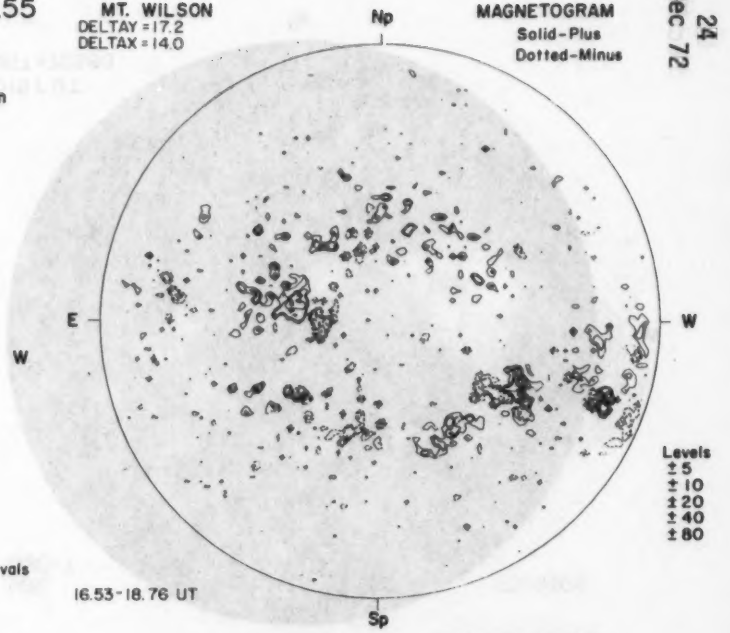
PROSPECT HILL
AFCRL

8.6 mm

Contours in Intervals of 200° K

MT. WILSON
DELTAY = 17.2
DELTAX = 14.0

MAGNETOGRAM
Solid-Plus
Dotted-Minus

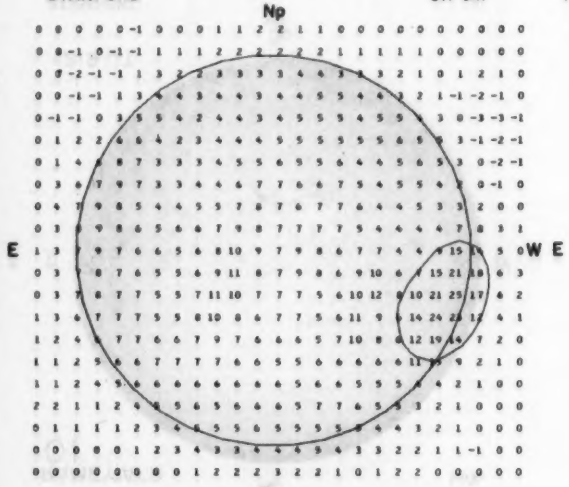


Levels
±5
±10
±20
±40
±80

16.53-18.76 UT

STANFORD

9.1 cm



20-21 UT

Brightness Unit 5,000° K

FLEURS, AUSTRALIA

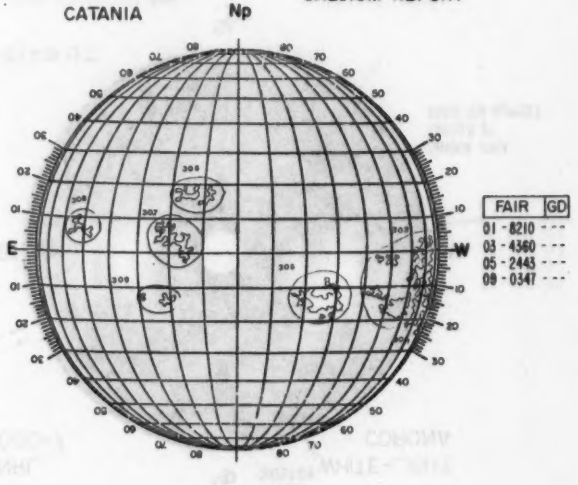
21 cm

02-03 UT

Resolution 3 Minutes of Arc
Brightness Unit 1,700° K

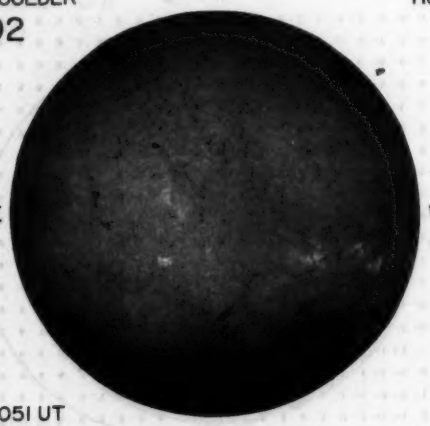
CALCIUM REPORT

CATANIA



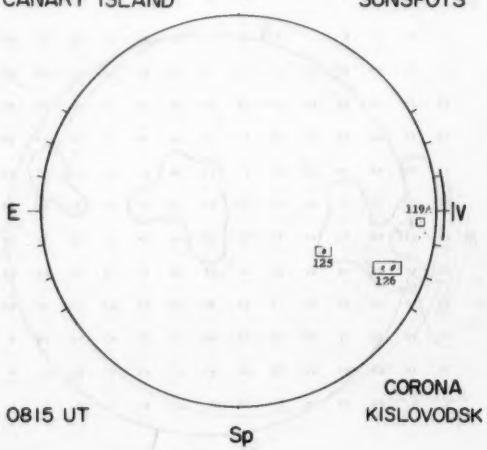
1155 UT

BOULDER
02



2051 UT

CANARY ISLAND



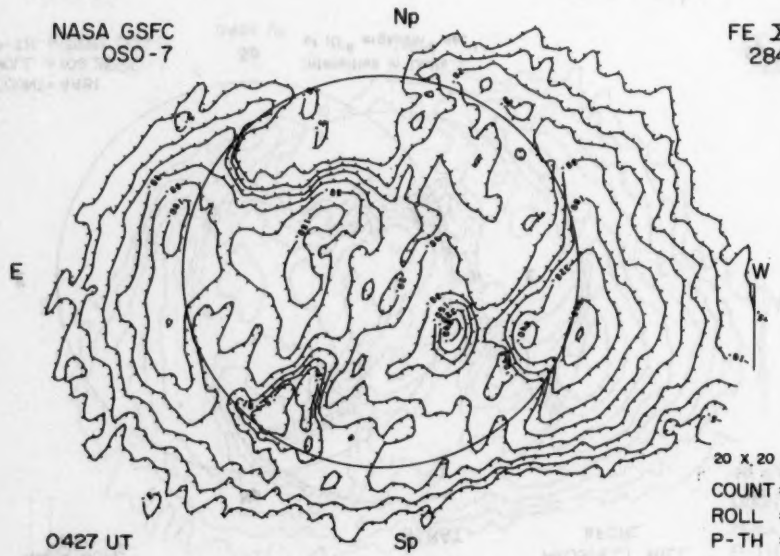
0815 UT

CORONA
KISLOVODSK

NRL
OSO-7

2241 UT

NASA GSFC
OSO-7



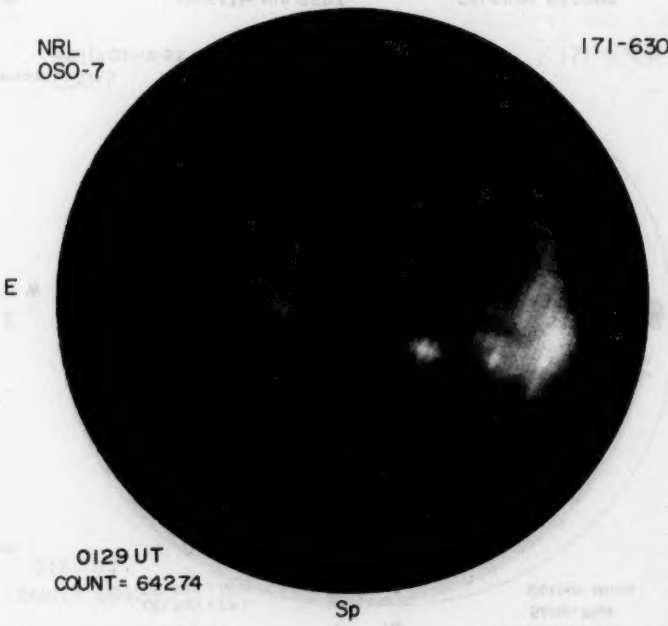
0427 UT

FE XV
284A

20 X 20 ARCSEC APERTURE
COUNT = 89619
ROLL = 107.0°
P-TH = 7.21

NRL
OSO-7

171-630A



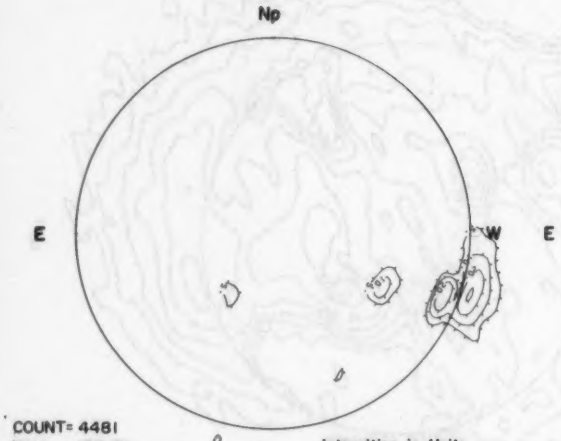
0129 UT
COUNT = 64274

25
Dec 72

DECEMBER 3, 1972 (P= 15.29 B_o= 0.56 L_o= 223.37

NASA GSFC
OSO-7

X-RAY



COUNT= 4481
ROLL = 108.2°
P-TH = 7.22

0456 UT

Intensities in Units of 10^{-6} ergs cm^{-2} sec^{-1}

PROSPECT HILL
AFCRL

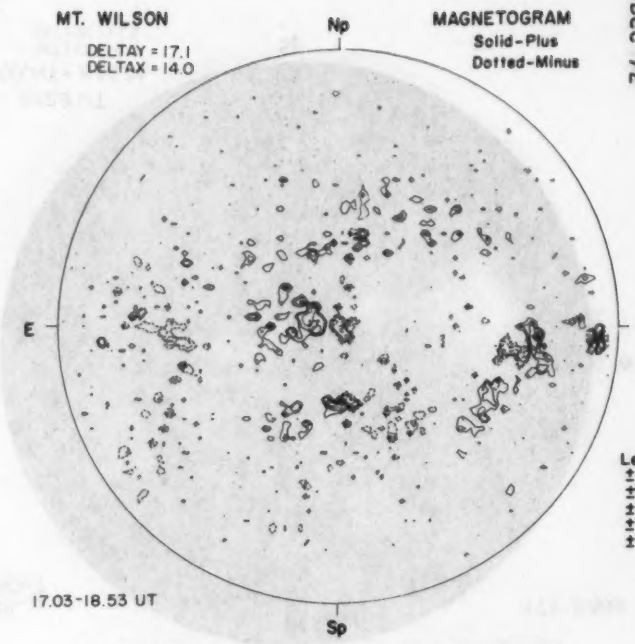
8.6 mm

Contours in Intervals of 200° K

MT. WILSON

MAGNETOGRAM
Solid-Plus
Dotted-Minus

DELTAY = 17.1
DELTAX = 14.0

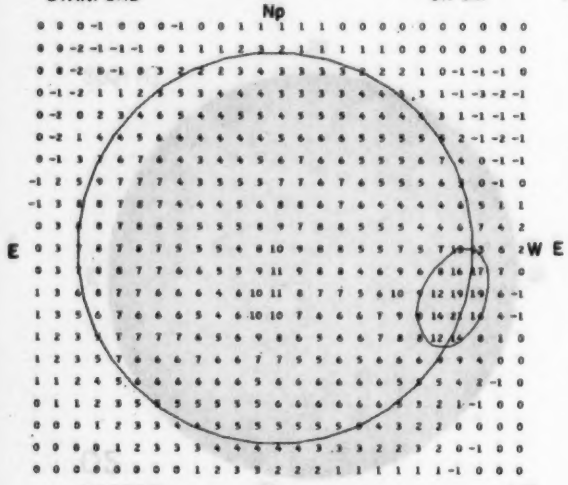


Levels
±5
±10
±20
±40
±80

17.03-18.53 UT

STANFORD

9.1 cm

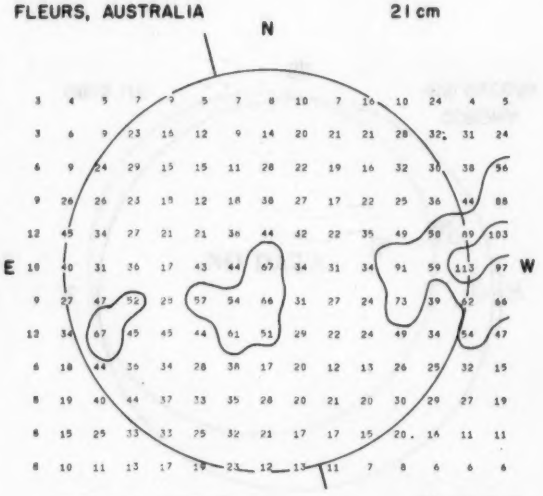


20-21 UT

Brightness Unit 5,000° K

FLEURS, AUSTRALIA

21 cm

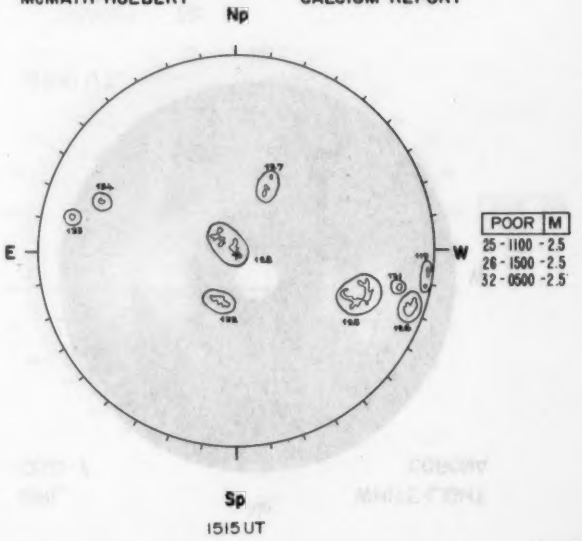


02-03 UT

Resolution 3 Minutes of Arc
Brightness Unit 1,700° K

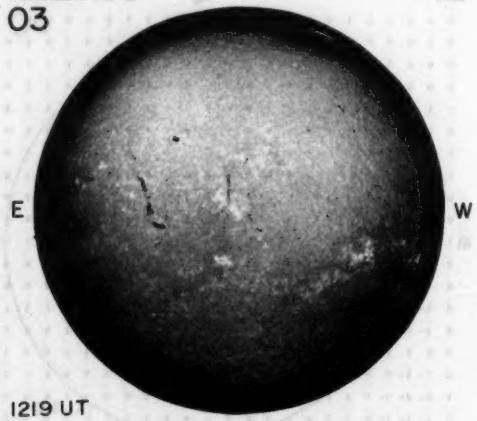
McMATH-HULBERT

CALCIUM REPORT



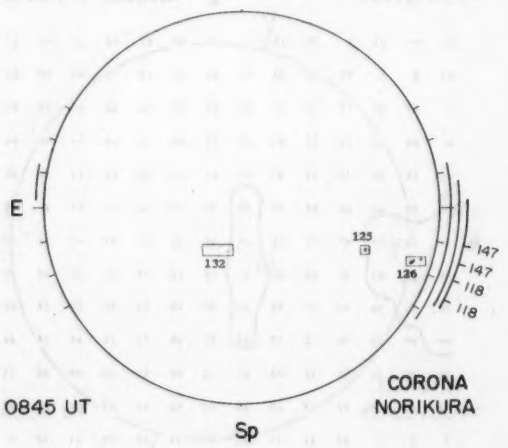
1515 UT

RAMEY AFB
03



1219 UT

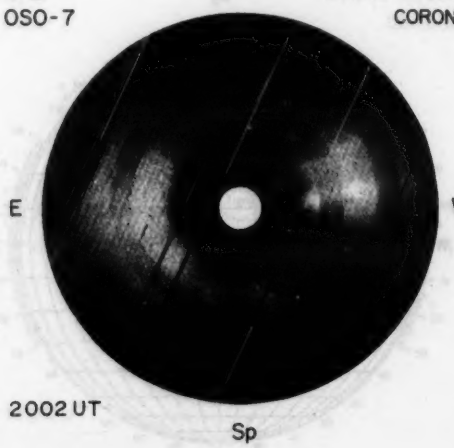
CANARY ISLAND



0845 UT

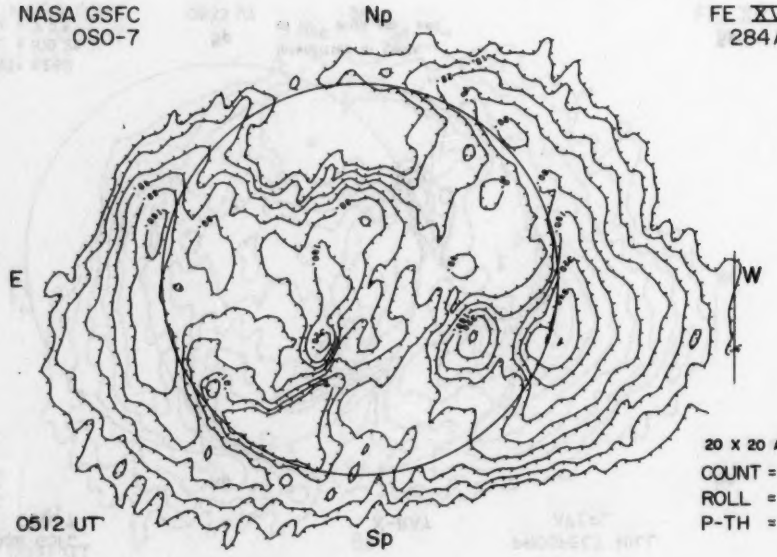
CORONA
NORIKURA

NRL
OSO-7



2002 UT

NASA GSFC
OSO-7

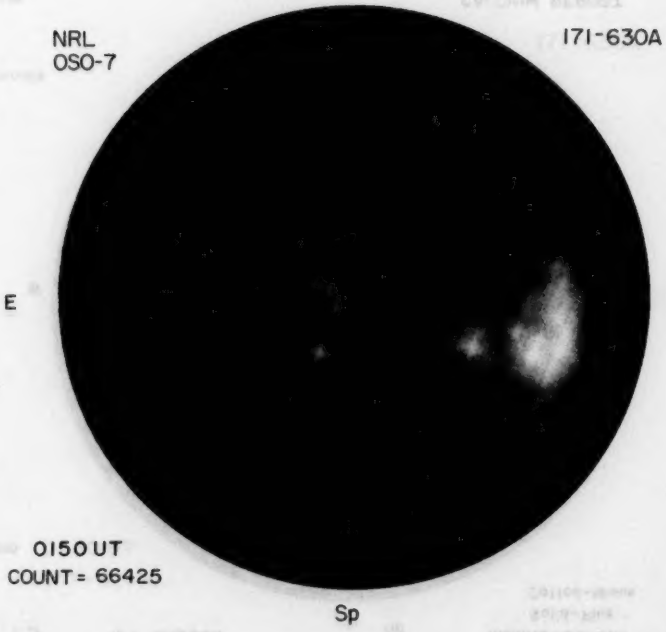


0512 UT

FE XV
284 A

20 X 20 ARCSEC APERTURE
COUNT = 79924
ROLL = 108.2°
P-TH = 7.22

NRL
OSO-7



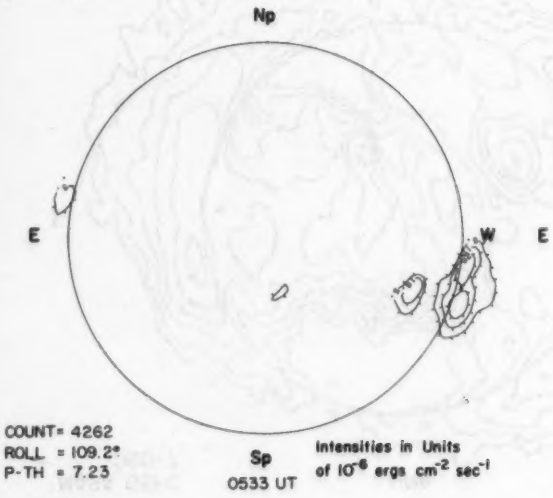
0150 UT
COUNT = 66425

27
Dec 72

DECEMBER 4, 1972 (P= 14.89 B_o= 0.43 L_o= 210.19

NASA GSFC
OSO-7

X-RAY



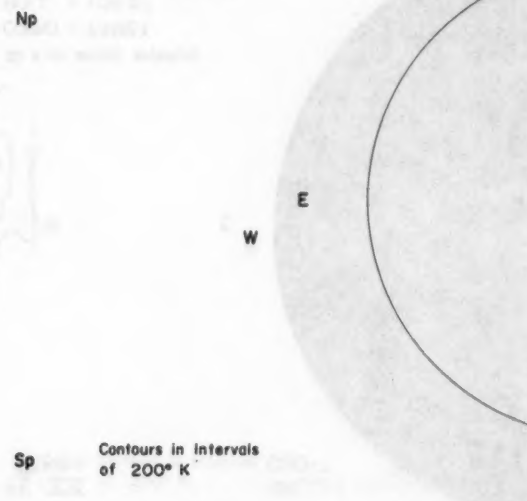
COUNT= 4262
ROLL = 109.2°
P-TH = 7.23

0533 UT

Intensities in Units of 10^{-6} ergs cm^{-2} sec^{-1}

PROSPECT HILL
AFCRL

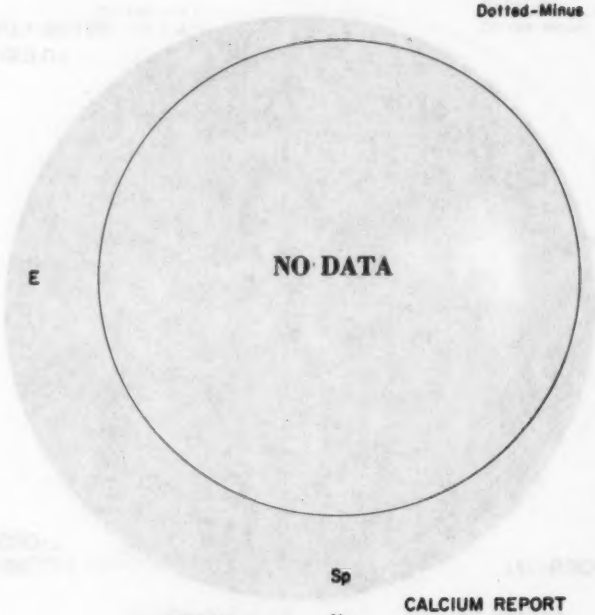
8.6 mm



Contours in intervals of 200° K

MT. WILSON

MAGNETOGRAM
Solid-Plus
Dotted-Minus

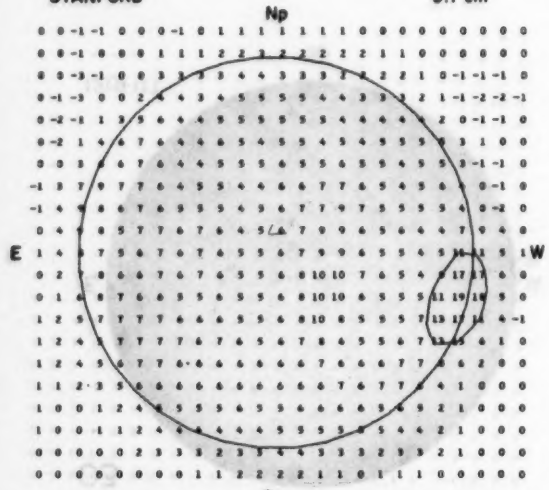


Levels
±5
±10
±20
±40
±80

28 Dec 72

STANFORD

9.1 cm

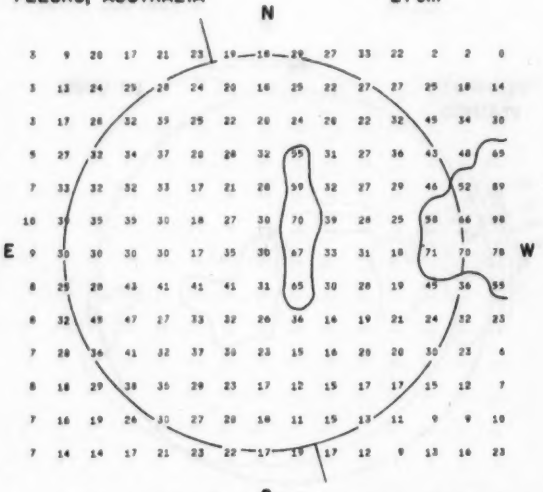


20-21 UT

Brightness Unit 5,000° K

FLEURS, AUSTRALIA

21 cm

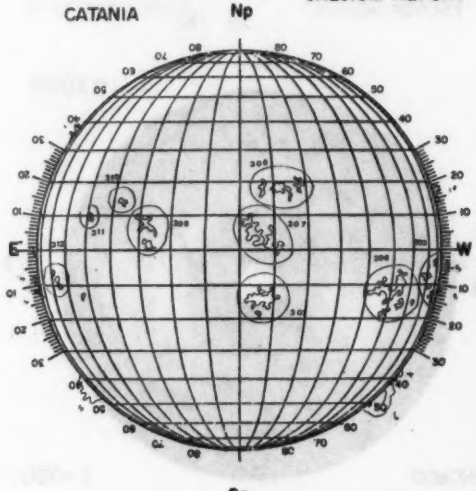


02-03 UT

Resolution 3 Minutes of Arc
Brightness Unit 1,700° K

CATANIA

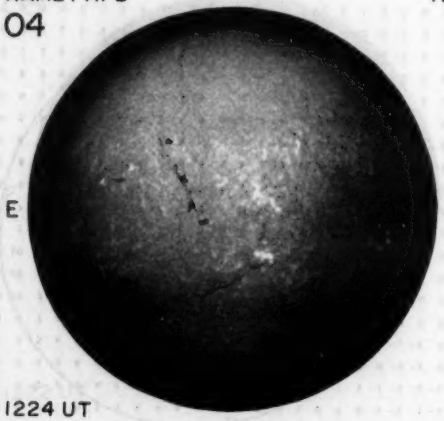
CALCIUM REPORT



	FAIR	GD
03 - 1662	---	
05 - 2527	---	
09 - 1175	---	

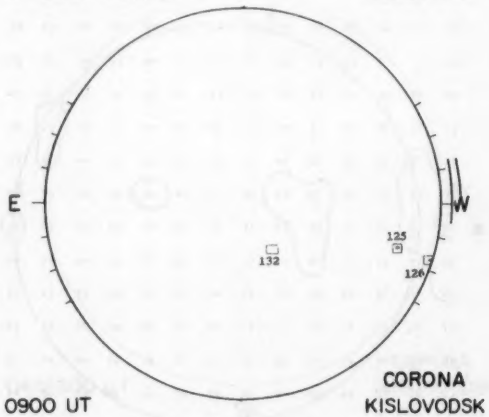
0815 UT

RAMEY AFB
04



1224 UT

CANARY ISLAND

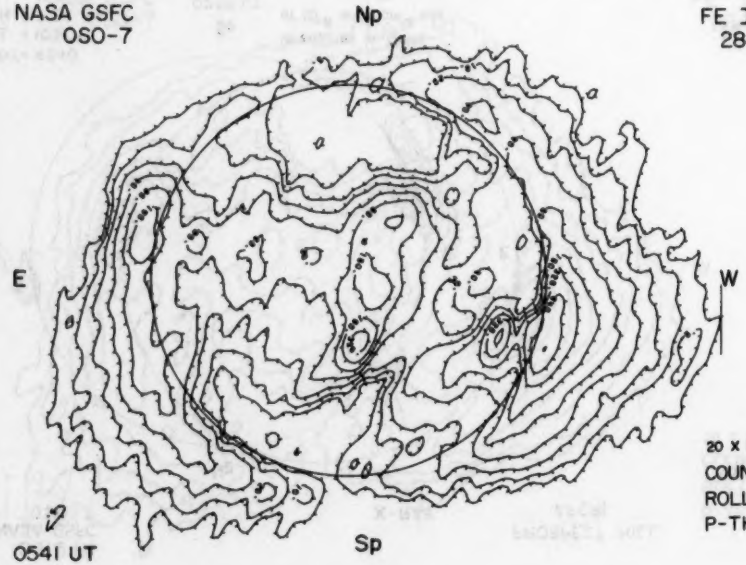


0900 UT

NRL
OSO-7

1309 UT

NASA GSFC
OSO-7



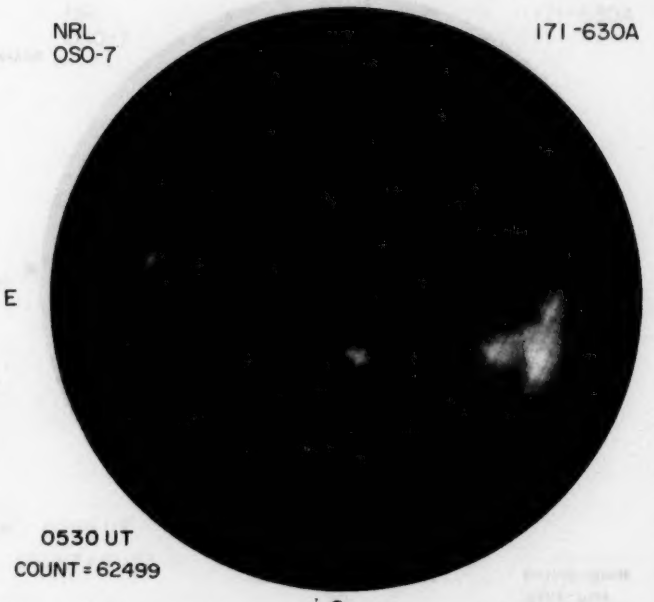
0541 UT

FE XV
284A

20 X 20 ARCSEC APERTURE
COUNT = 64359
ROLL = 109.2°
P-TH = 7.23

NRL
OSO-7

171-630A



0530 UT
COUNT = 62499

29
Dec 72

DECEMBER 5, 1972 (P= 14.49 B_o= 0.31 L_o= 197.01

MT. WILSON

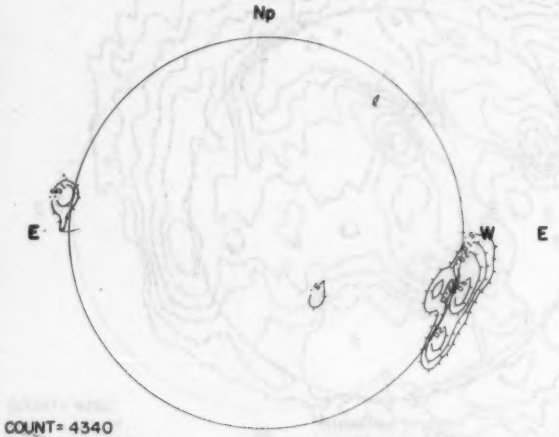
Np

MAGNETOGRAM
Solid-Plus
Dotted-Minus

30
Dec 72

NASA GSFC
OSO-7

X-RAY



COUNT= 4340
ROLL = 109.0°
P-TH = 7.24

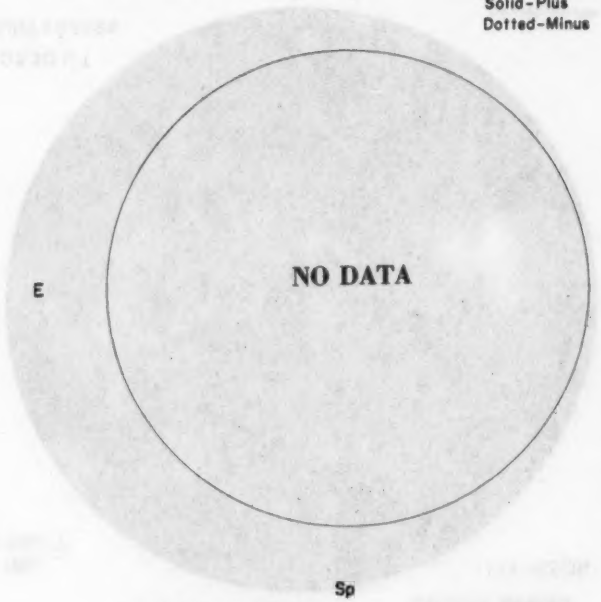
0259 UT

Intensities in Units of 10^{-6} ergs cm^{-2} sec^{-1}

PROSPECT HILL
AFCRL

8.6 mm

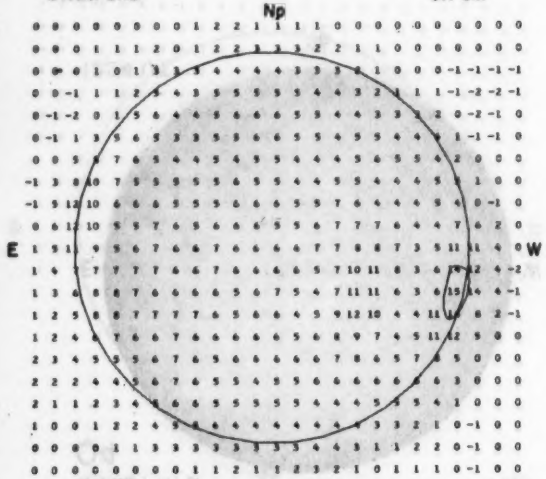
Contours in Intervals of 200° K



Levels
±5
±10
±20
±40
±80

STANFORD

9.1 cm

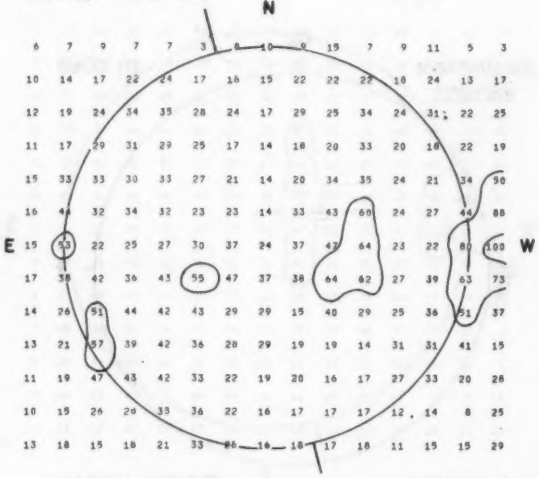


20-21 UT

Brightness Unit 5,000° K

FLEURS, AUSTRALIA

21 cm



02-03 UT

Resolution 3 Minutes of Arc
Brightness Unit 1,700° K

McMATH-HULBERT

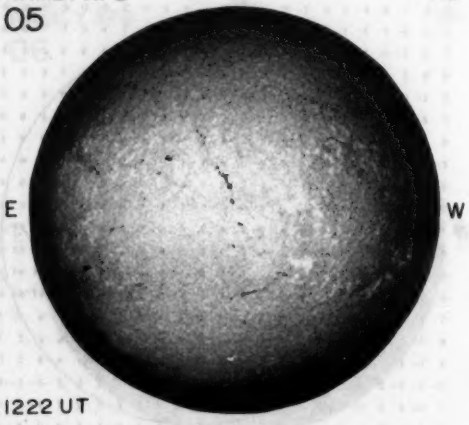
CALCIUM REPORT

Np

RAMEY AFB

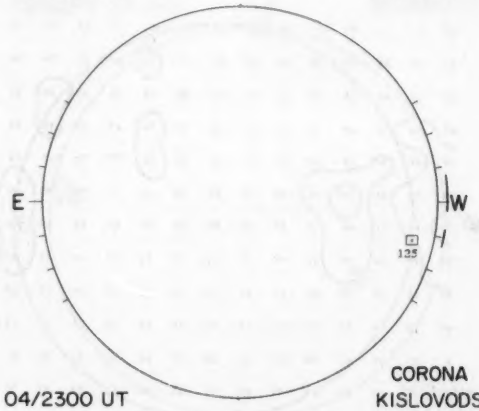
Np

RAMEY AFB
05



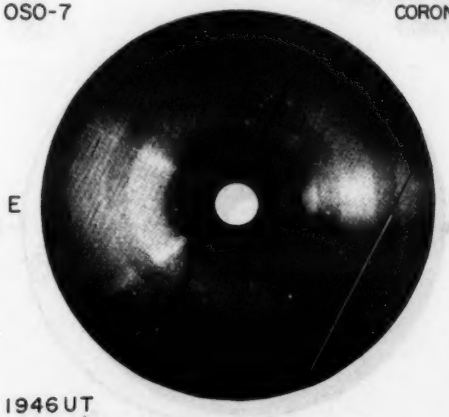
1222 UT

CARNARVON



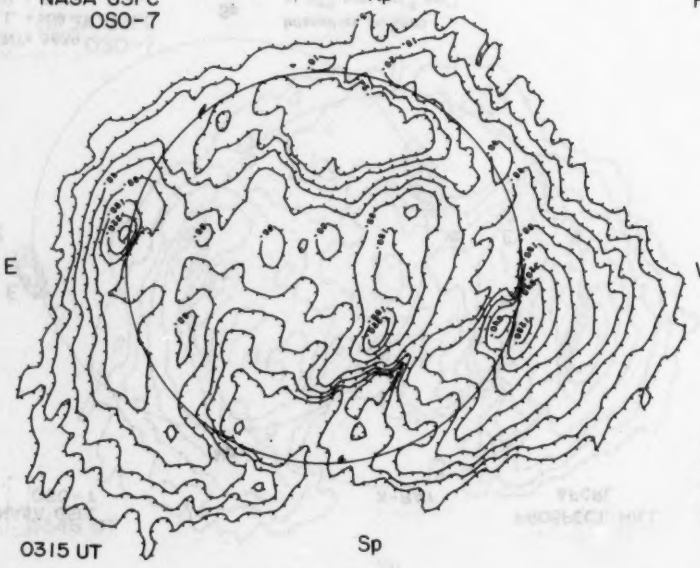
04/2300 UT

NRL
OSO-7



1946 UT

NASA GSFC
OSO-7



0315 UT

FE XV
284A

20 X 20 ARCSEC APERTURE
COUNT = 71685
ROLL = 109.0°
P-TH = 7.24

NRL
OSO-7

0255 UT
COUNT = 61153

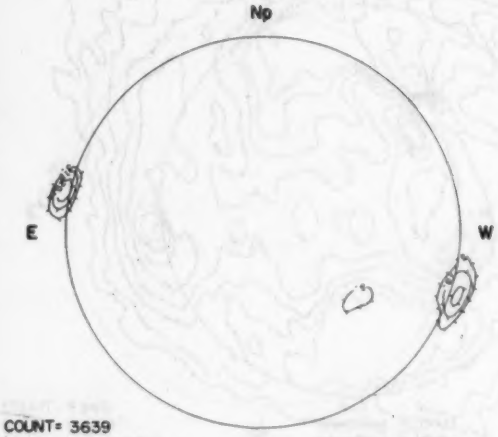
31
Dec 72

DECEMBER 6, 1972 (P= 14.08 B_o= 0.18 L_o= 183.84

32
Dec 72

NASA GSFC
OSO-7

X-RAY



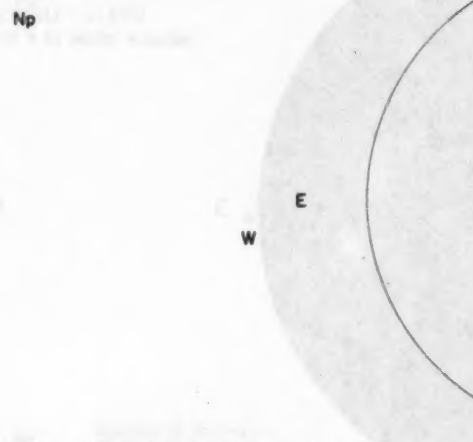
COUNT= 3639
ROLL = 109.4°
P-TH = 7.24

0346 UT

Intensities in Units of 10^{-6} ergs cm^{-2} sec^{-1}

PROSPECT HILL
AFCRL

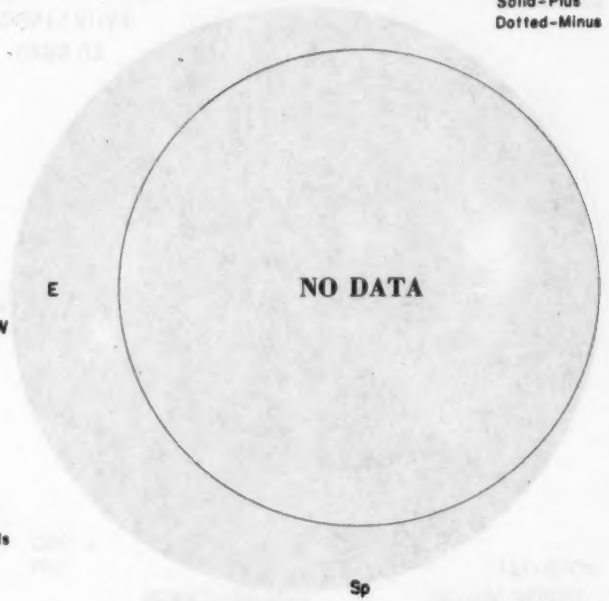
8.6 mm



Contours in Intervals of 200° K

MT. WILSON

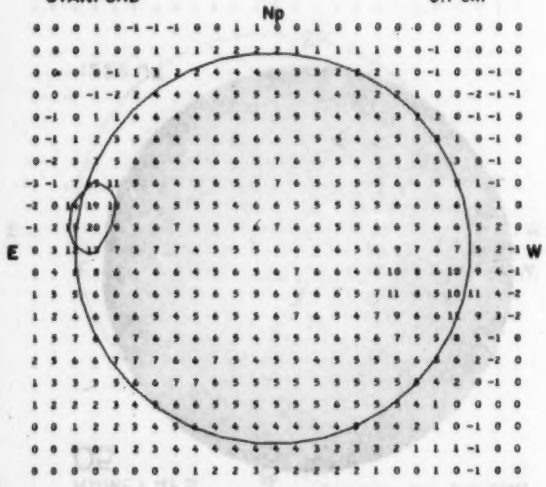
MAGNETOGRAM
Solid-Plus
Dotted-Minus



Levels
±5
±10
±20
±40
±80

STANFORD

9.1 cm

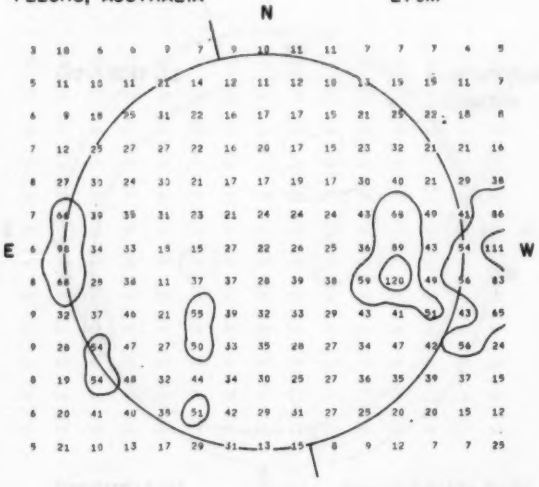


20-21 UT

Brightness Unit 5,000° K

FLEURS, AUSTRALIA

21 cm

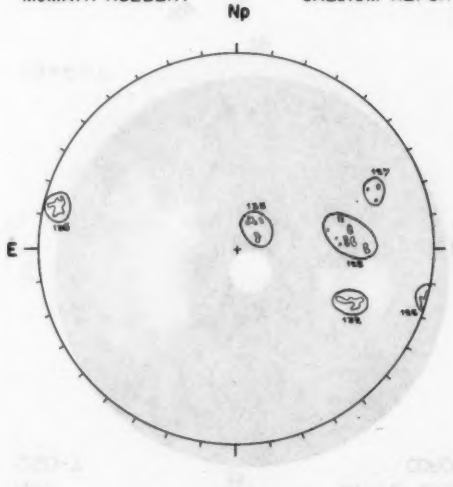


02-03 UT

Resolution 3 Minutes of Arc
Brightness Unit 1,700° K

McMATH-HULBERT

CALCIUM REPORT



FAIR	M
32 - 0700	-3.0
36 - 1800	-3.5

1530 UT

20-21 UT

Brightness Unit 5,000° K

02-03 UT

Brightness Unit 1,700° K

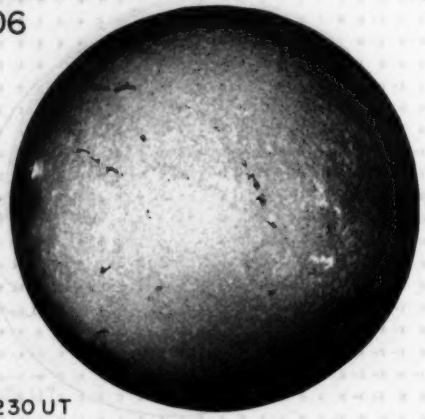
1530 UT

RAMEY AFB

06

Np

Hα



E

W

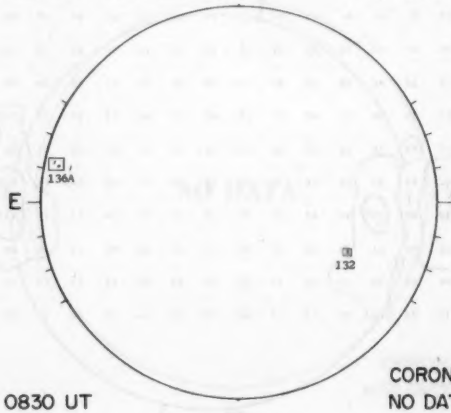
Sp

1230 UT

CANARY ISLAND

Np

SUNSPOTS



E

W

Sp

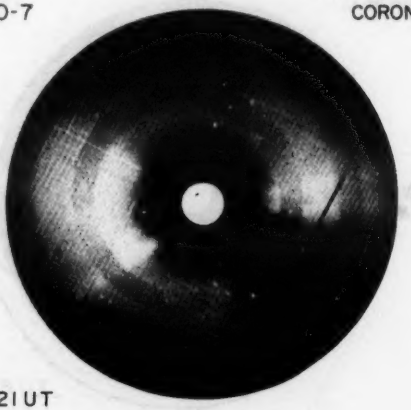
0830 UT

CORONA
NO DATA

NRL
OSO-7

Np

WHITE-LIGHT
CORONA



E

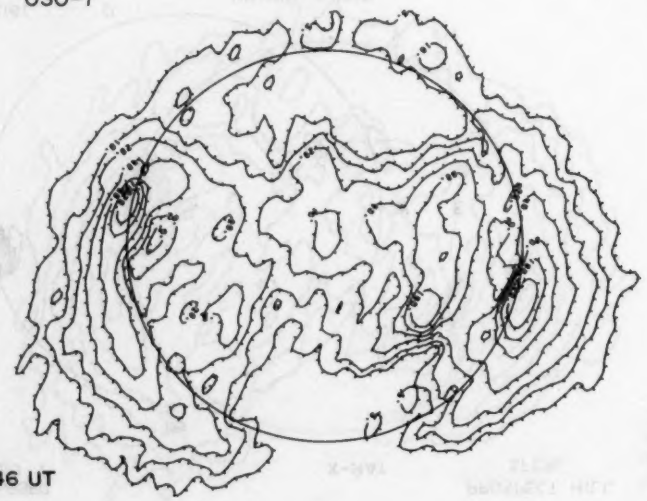
W

Sp

1721 UT

NASA GSFC
OSO-7

Np



E

W

Sp

0346 UT

FE XV
284A

COUNT = 34309
ROLL = 109.4°
P-TH = 7.24

Np

NRL
OSO-7

171-630A

E

W

Sp

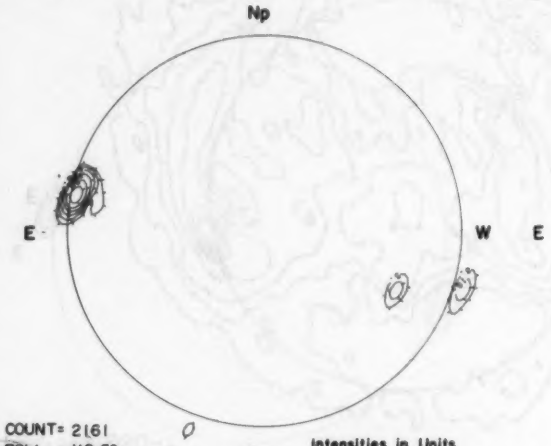
0342 UT

COUNT = 59873

DECEMBER 7, 1972 (P= 13.66 B_o= 0.05 L_o= 170.66

NASA GSFC
OSO-7

X-RAY



COUNT= 2161
ROLL = 110.5°
P-TH = 7.24

0134 UT

Intensities in Units of 10^{-6} ergs cm^{-2} sec^{-1}

PROSPECT HILL
AFCRL

8.6 mm

Contours in Intervals of 200° K

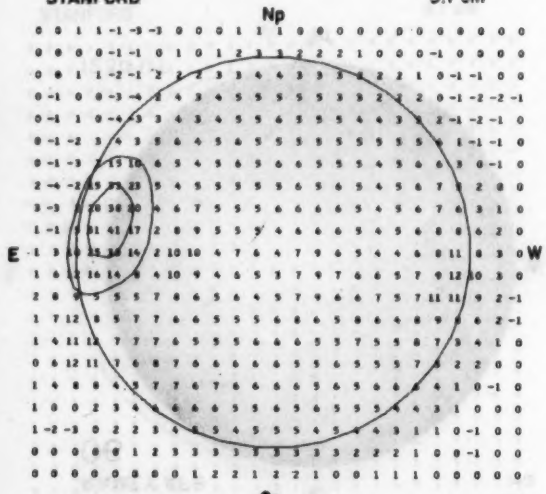
MT. WILSON

MAGNETOGRAM
Solid-Plus
Dotted-Minus

Levels
±5
±10
±20
±40
±80

STANFORD

9.1 cm

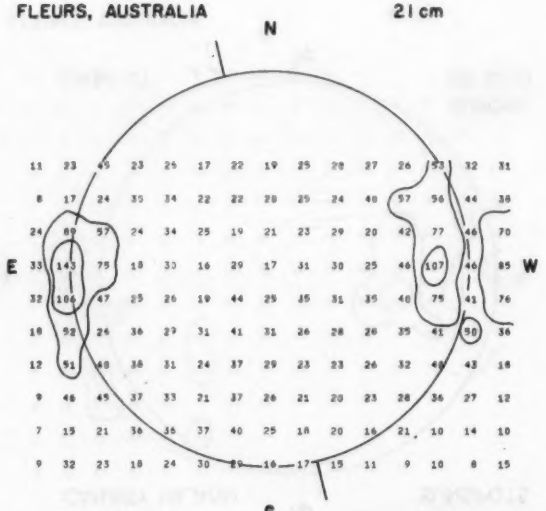


20-21 UT

Brightness Unit 5,000° K

FLEURS, AUSTRALIA

21 cm

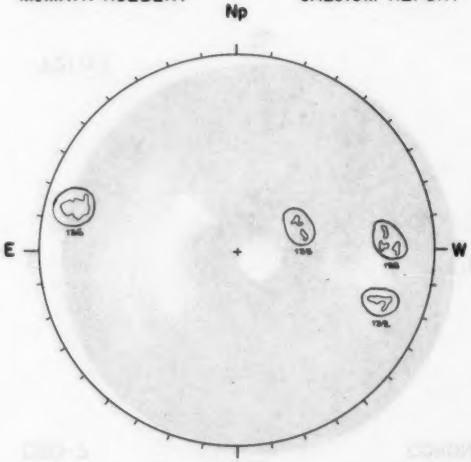


02-03 UT

Resolution 3 Minutes of Arc
Brightness Unit 1,700° K

McMATH-HULBERT

CALCIUM REPORT



POOR	B
32 - 0900	-2.5
36 - 3100	-3.5

1450 UT

20-21 UT

02-03 UT Brightness Unit 1,700° K

1450 UT

RAMEY AFB
07

Np

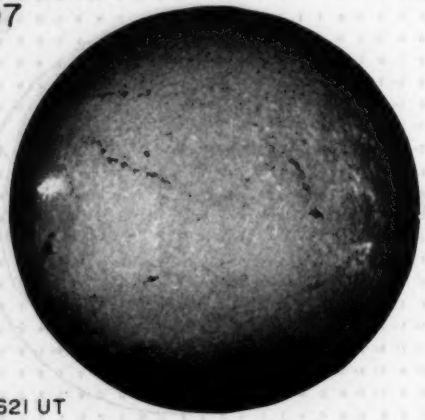
Hα

E

W

Sp

1621 UT



BOULDER

Np

SUNSPOTS

E

NO DATA

W

Sp

CORONA
KISLOVODSK

NRL
OSO-7

Np

WHITE-LIGHT
CORONA

E

W

1333 UT

Sp

NASA GSFC
OSO-7

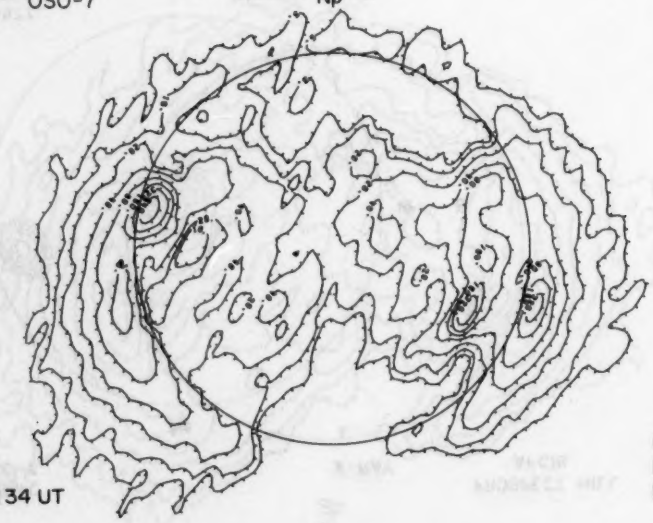
Np

E

W

Sp

0134 UT



FE XV
284 A

COUNT = 37442
ROLL = 110.5°
P-TH = 7.24

Np

NRL
OSO-7

171-630A

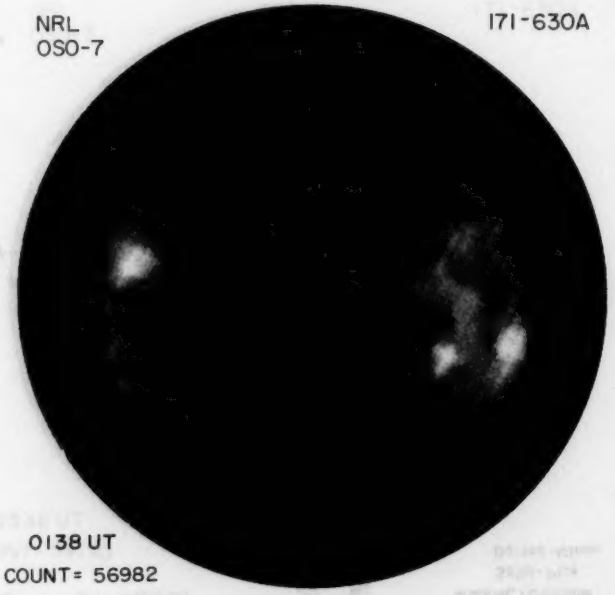
E

W

0138 UT

COUNT = 56982

Sp



35
Dec 72

DECEMBER 8, 1972 (P= 13.24 B_o= -0.08 L_o= 157.48

NASA GSFC
OSO-7

X-RAY

COUNT= 4577
ROLL = 109.8°
P-TH = 7.24

0146 UT

Intensities in Units of 10^{-6} ergs cm^{-2} sec^{-1}

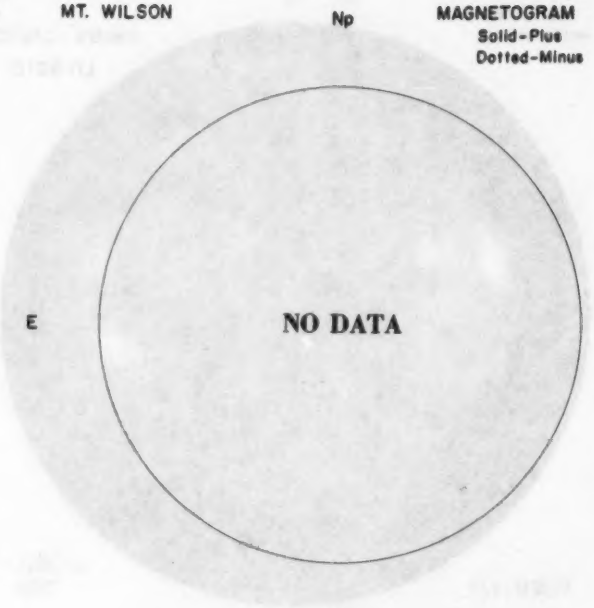
PROSPECT HILL
AFCRL

8.6 mm

Contours in Intervals of 200° K

MT. WILSON

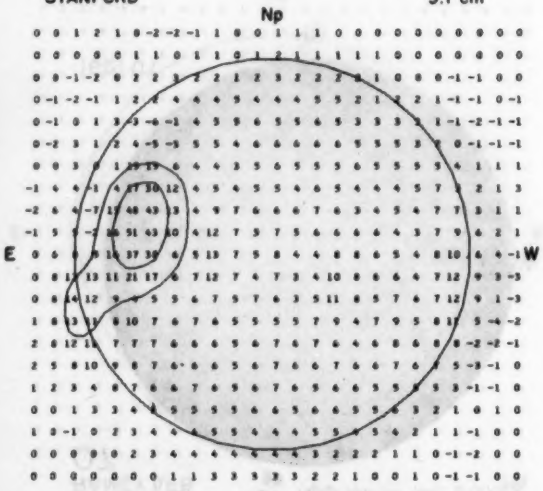
MAGNETOGRAM
Solid-Plus
Dotted-Minus



Levels
±5
±10
±20
±40
±80

STANFORD

9.1 cm

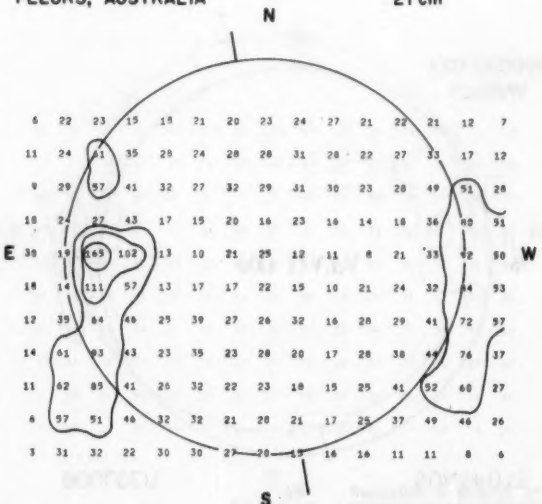


20-21 UT

Brightness Unit 5,000° K

FLEURS, AUSTRALIA

21 cm

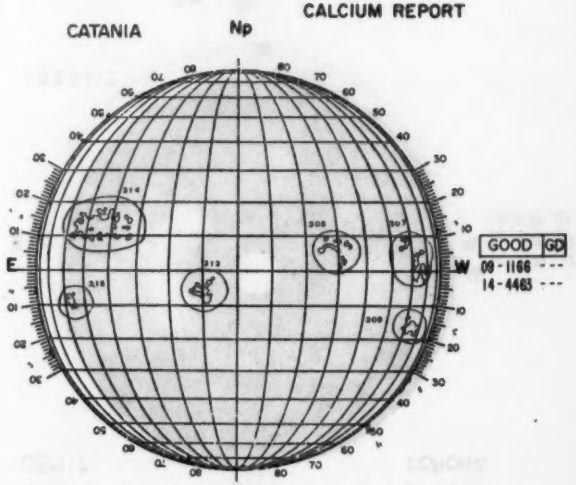


02-03 UT

Resolution 3 Minutes of Arc
Brightness Unit 1,700° K

CATANIA

CALCIUM REPORT



0920 UT

Brightness Unit 5,000° K
20-21 UT

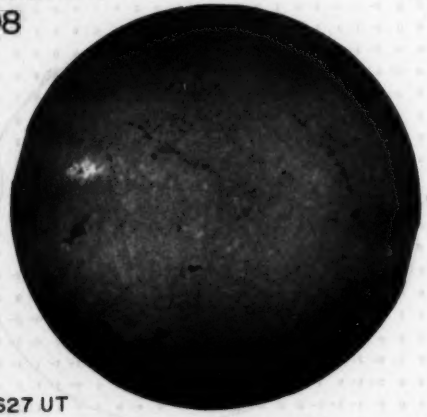
02-03 UT
Resolution 3 Minutes of Arc
Brightness Unit 1,700° K

Sp
0920 UT

RAMEY AFB
08

Np

Hα



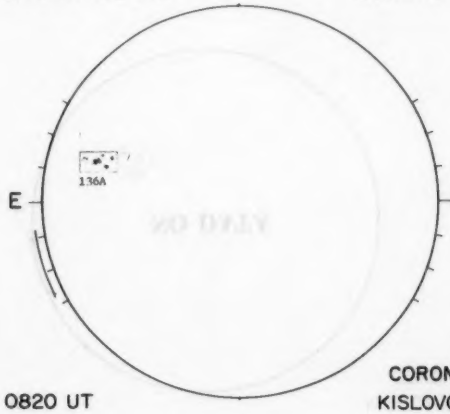
1627 UT

Sp

CANARY ISLAND

Np

SUNSPOTS



CORONA
KISLOVODSK

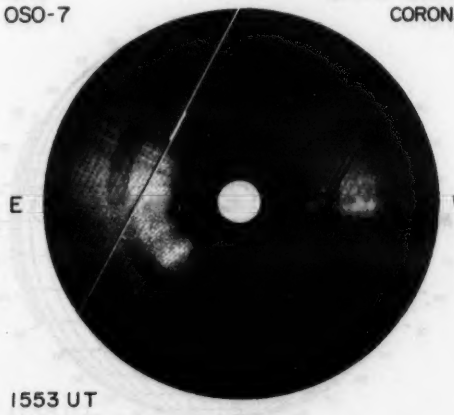
0820 UT

Sp

NRL
OSO-7

Np

WHITE-LIGHT
CORONA

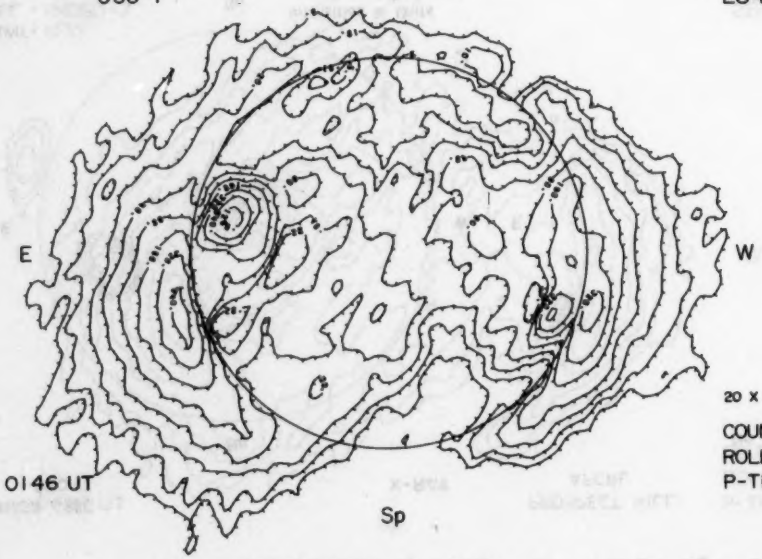


1553 UT

Sp

NASA GSFC
OSO-7

Np



0146 UT

Sp

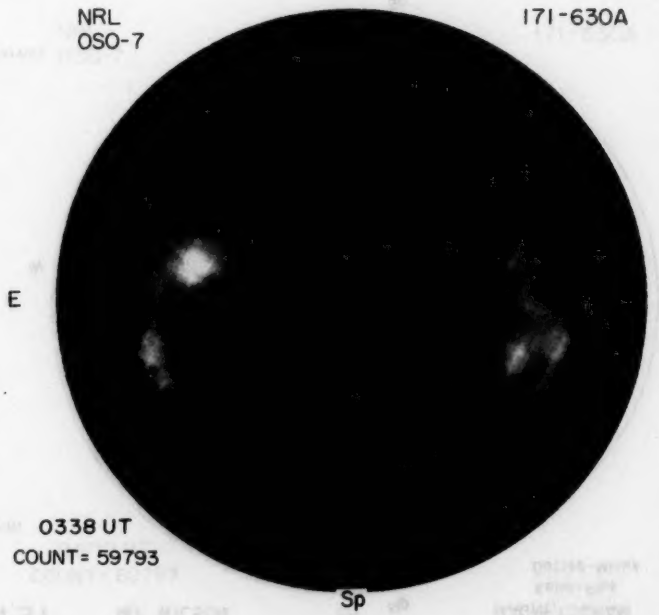
FE XV
284A

20 X 20 ARCSEC APERTURE
COUNT = 78625
ROLL = 109.8°
P-TH = 7.24

Np

NRL
OSO-7

171-630A



0338 UT
COUNT= 59793

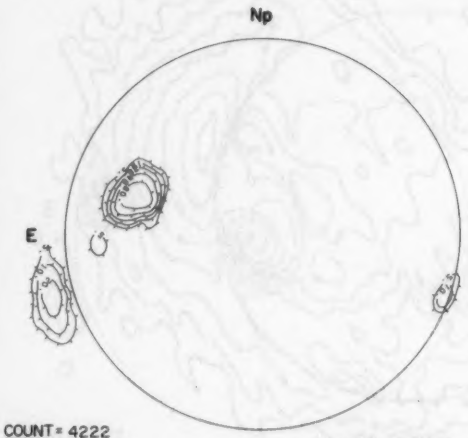
Sp

37
Dec 72

DECEMBER 9, 1972 (P= 12.81 B_o= -0.21 L_o= 144.31

NASA GSFC
OSO-7

X-RAY



COUNT= 4222
ROLL = 109.9°
P-TH = 7.24

0405 UT

Intensities in Units of 10^{-6} ergs cm^{-2} sec^{-1}

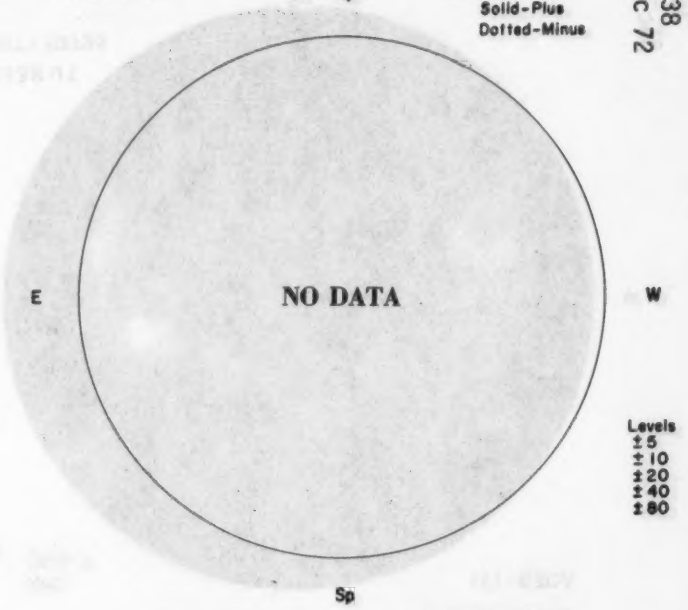
PROSPECT HILL
AFCRL

8.6 mm

Contours in Intervals of 200° K

MT. WILSON

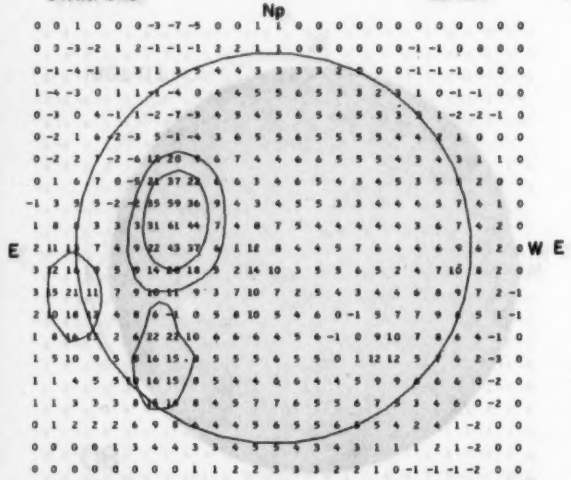
MAGNETOGRAM
Solid-Plus
Dotted-Minus



Levels
±5
±10
±20
±40
±80

STANFORD

9.1 cm



20-21 UT

Brightness Unit 5,000° K

FLEURS, AUSTRALIA

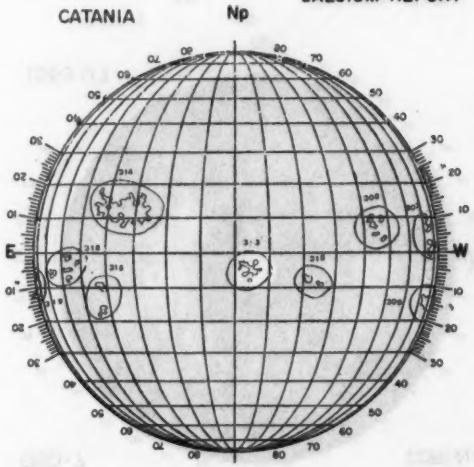
21 cm

02-03 UT

Resolution 3 Minutes of Arc
Brightness Unit 1,700° K

CATANIA

CALCIUM REPORT



	POOR	GD
09 - 1681	---	
14 - 3843	---	
15 - 0234	---	

0840 UT

20-21 UT

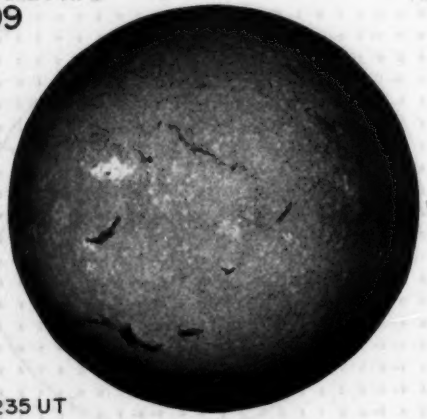
02-03 UT Brightness Unit 1,700° K

0840 UT

RAMEY AFB
09

Np

Hα



E

W

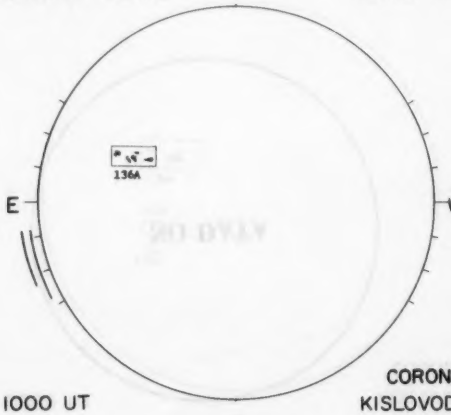
1235 UT

Sp

CANARY ISLAND

Np

SUNSPOTS



E

W

1000 UT

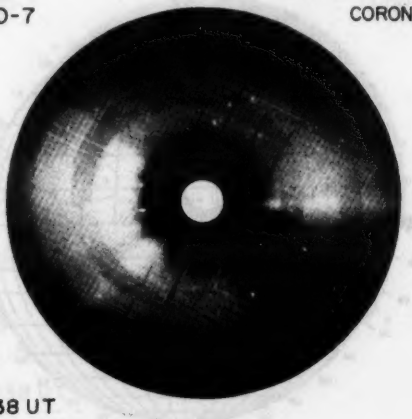
Sp

CORONA
KISLOVODSK

NRL
OSO-7

Np

WHITE-LIGHT
CORONA



E

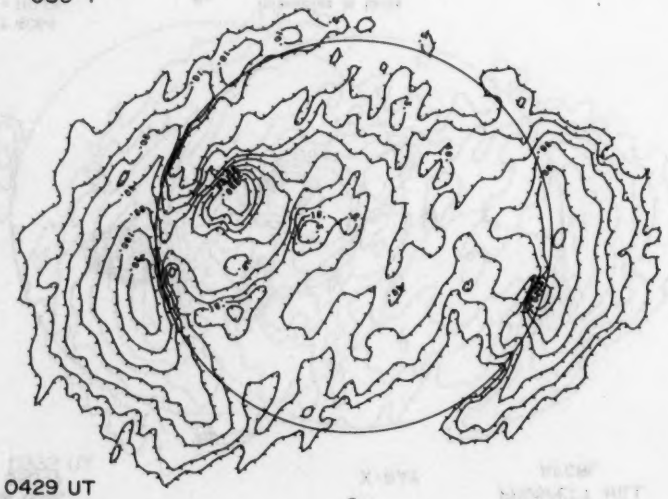
W

1138 UT

Sp

NASA GSFC
OSO-7

Np



E

W

0429 UT

Sp

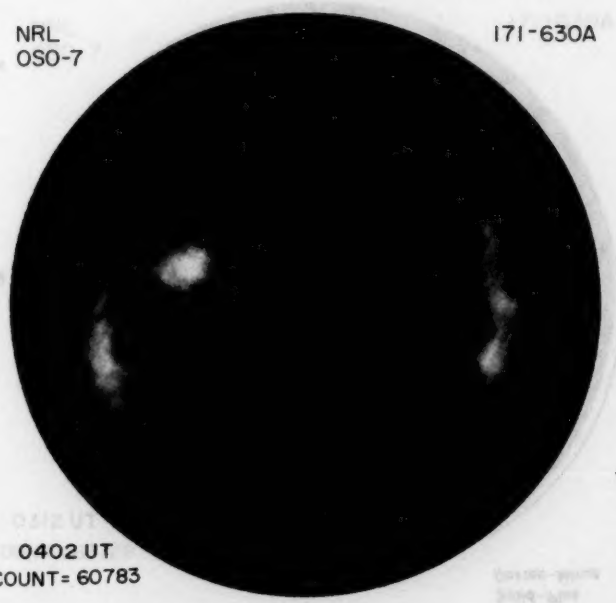
FE XV
284 A

COUNT = 42824
ROLL = 109.9°
P-TH = 7.24

Np

NRL
OSO-7

171-630A



E

W

0402 UT
COUNT = 60783

Sp

39
Dec 72

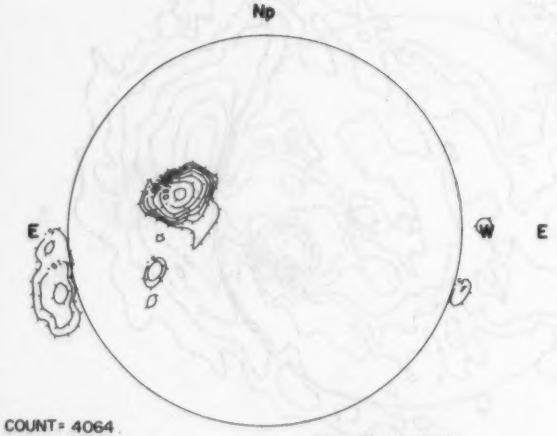
DECEMBER 10, 1972 (P= 12.38 B_o= -0.33 L_o= 131.13

MT. WILSON

MAGNETOGRAM
Solid-Plus
Dotted-Minus

NASA GSFC
OSO-7

X-RAY



COUNT= 4064
ROLL = 110.0°
P-TH = 7.23

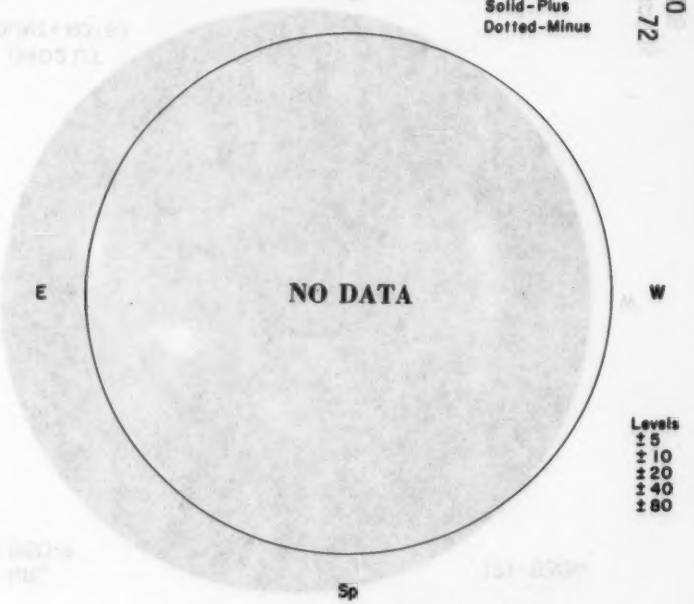
0340 UT

Intensities in Units of 10^{-6} ergs cm^{-2} sec^{-1}

PROSPECT HILL
AFCRL

8.6 mm

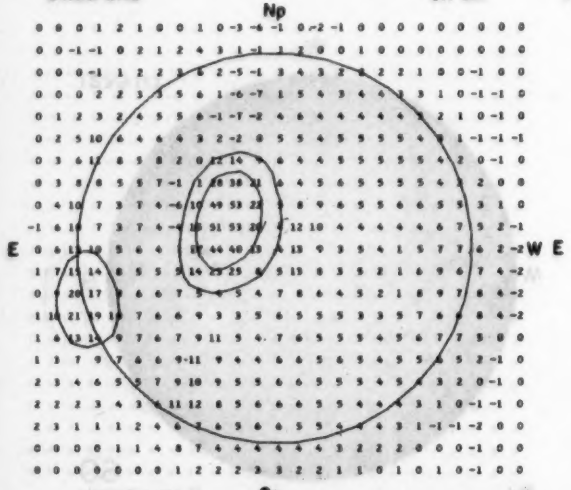
Contours in Intervals of 200° K



Levels
±5
±10
±20
±40
±80

STANFORD

9.1 cm



20-21 UT

Brightness Unit 5,000° K

FLEURS, AUSTRALIA

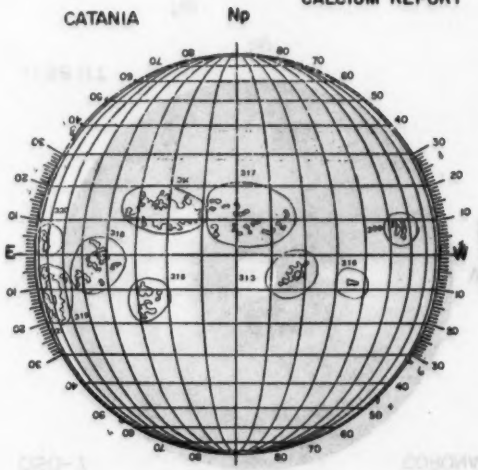
21 cm

02-03 UT

Resolution 3 Minutes of Arc
Brightness Unit 1,700° K

CALCIUM REPORT

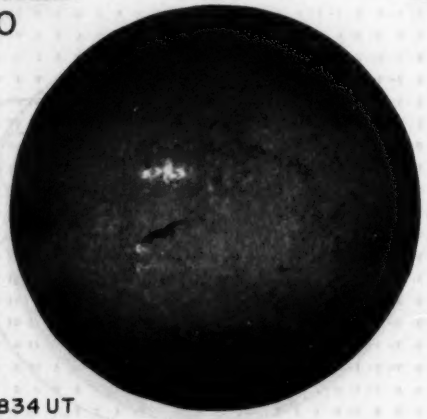
CATANIA



FAIR	GD
14 - 5680	---
15 - 1018	---
18 - 4449	---

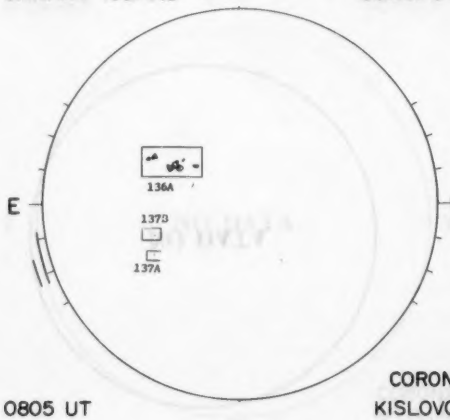
0850 UT

BOULDER
10



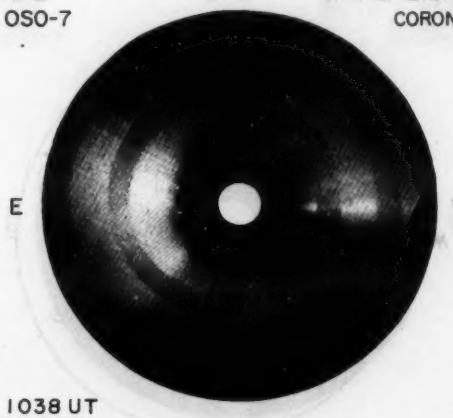
1834 UT

CANARY ISLAND



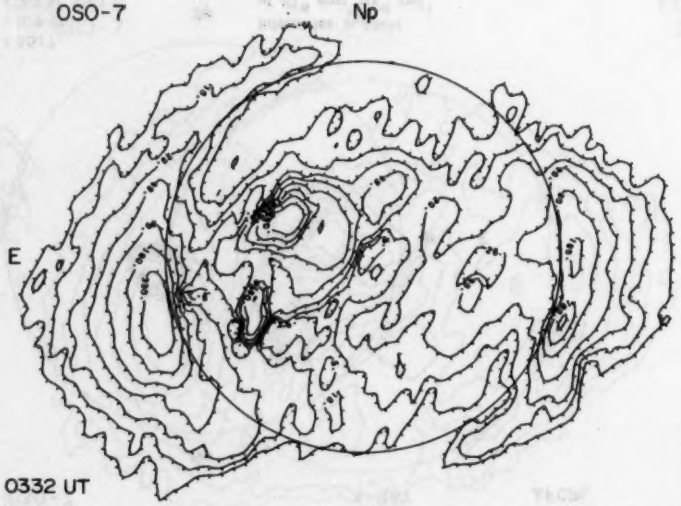
0805 UT

NRL
OSO-7



1038 UT

NASA GSFC
OSO-7



0332 UT

FE XV
284A

COUNT= 46045
ROLL = 110.5°
P-TH = 7.23

NRL
OSO-7

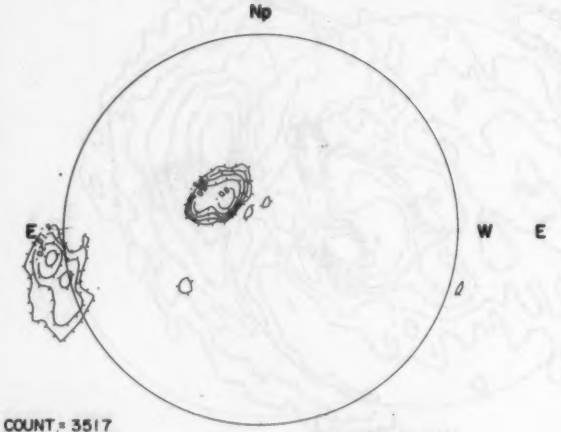
0312 UT
COUNT= 63128

41
Dec 72

DECEMBER 11, 1972 (P= 11.94 B_o= -0.46 L_o= 117.96

NASA GSFC
OSO-7

X-RAY



COUNT = 3517
ROLL = 109.8°
P-TH = 7.23

0028 UT

Intensities in Units of 10^{-6} ergs cm^{-2} sec^{-1}

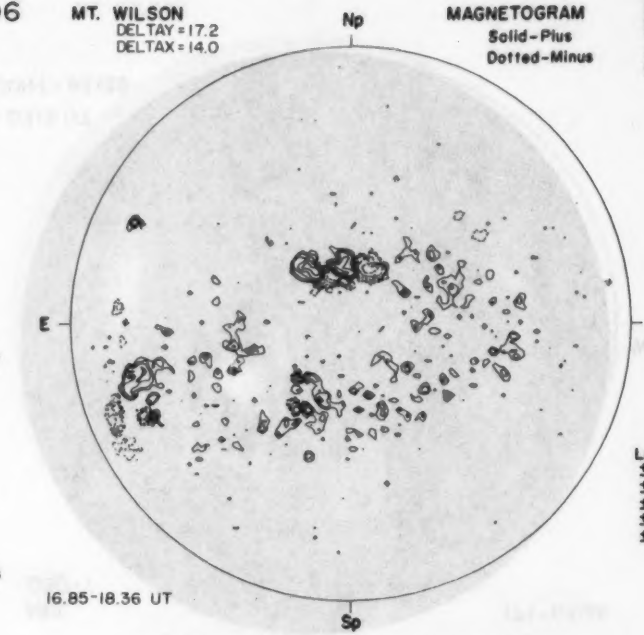
PROSPECT HILL
AFCRL

8.6 mm

Contours in Intervals of 200° K

MT. WILSON
DELTAY = 17.2
DELTAX = 14.0

MAGNETOGRAM
Solid - Plus
Dotted - Minus

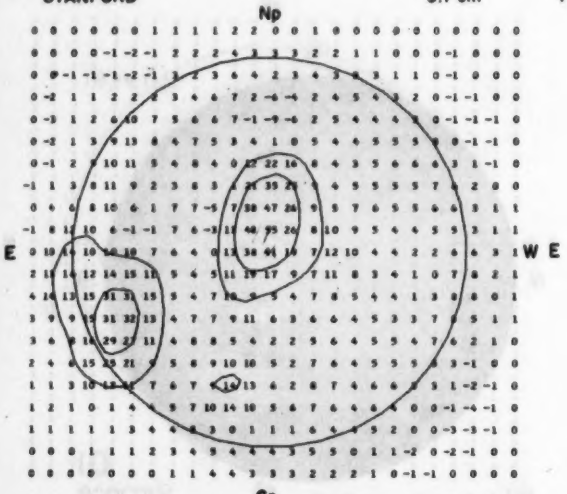


Levels
±5
±10
±20
±40
±80

16.85-18.36 UT

STANFORD

9.1 cm



20-21 UT

Brightness Unit 5,000° K

FLEURS, AUSTRALIA

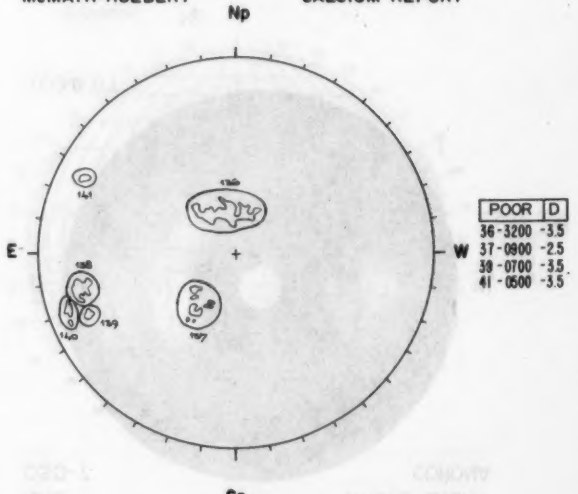
21 cm

02-03 UT

Resolution 3 Minutes of Arc
Brightness Unit 1,700° K

McMATH-HULBERT

CALCIUM REPORT



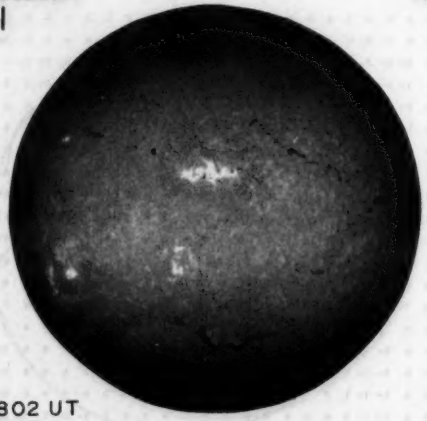
POOR	D
36-3200	-3.5
37-0900	-2.5
39-0700	-3.5
41-0500	-3.5

1415 UT

BOULDER
II

Np

Hα



E W

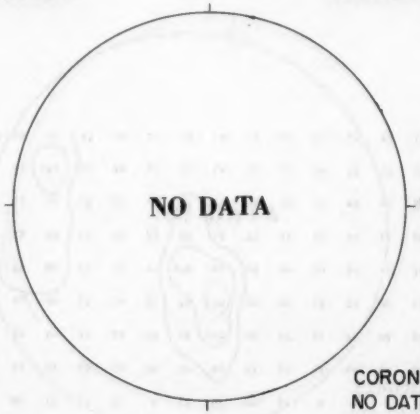
Sp

1802 UT

BOULDER

Np

SUNSPOTS



E W

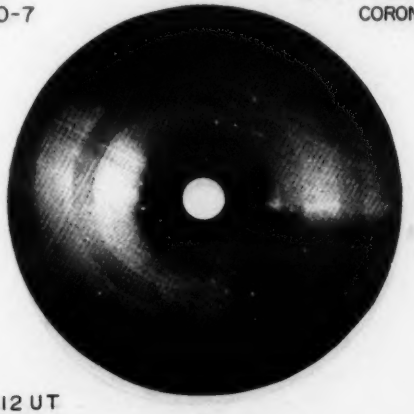
Sp

CORONA
NO DATA

NRL
OSO-7

Np

WHITE-LIGHT
CORONA



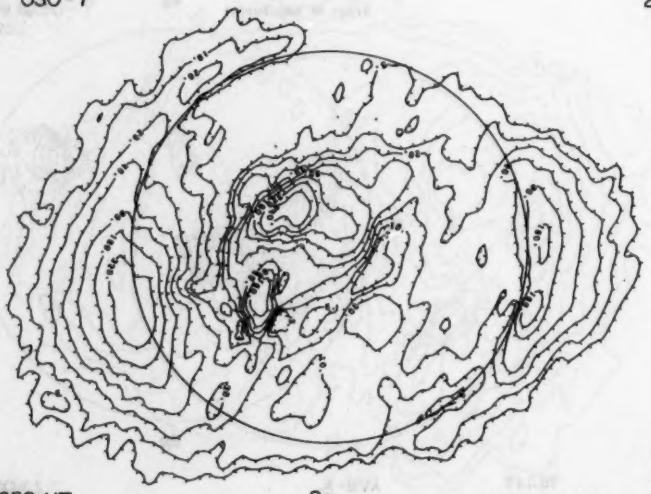
E W

Sp

0812 UT

NASA GSFC
OSO-7

Np



E W

Sp

0052 UT

FE XV
284A

COUNT = 50178
ROLL = 109.8°
P-TH = 7.23

Np

NRL
OSO-7

171-630A

E W

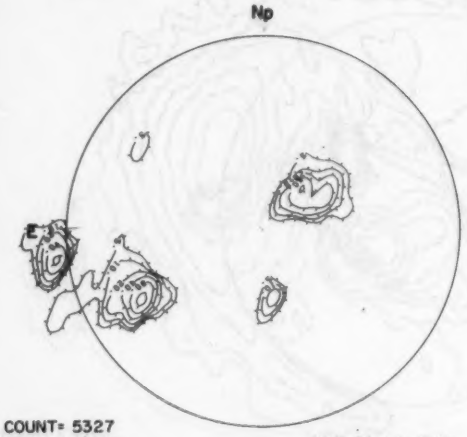
Sp

0105 UT
COUNT = 62184

DECEMBER 12, 1972 (P= 11.50 B_o = -0.59 L_o = 104.78

NASA GSFC
OSO-7

X-RAY



COUNT= 5327
ROLL = 108.6°
P-TH = 7.21

1940 UT

Intensities in Units of 10^{-6} ergs cm^{-2} sec^{-1}

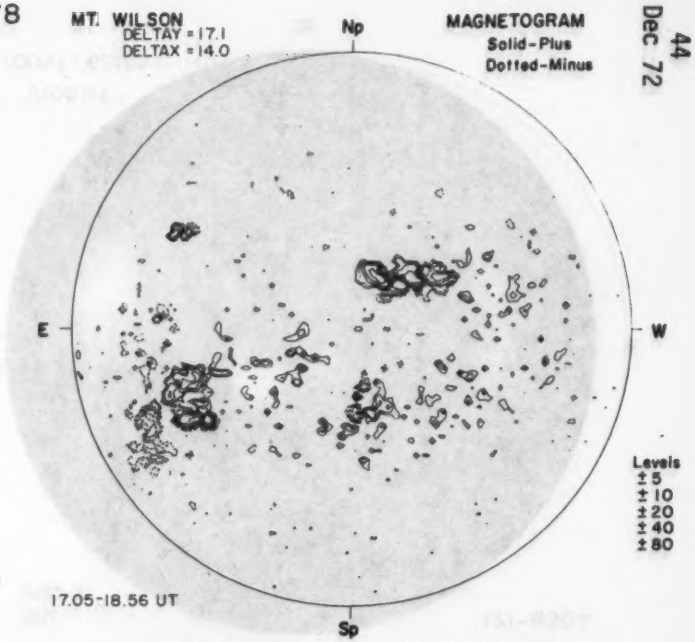
PROSPECT HILL
AFCRL

8.6 mm

Contours in Intervals of 200° K

MT. WILSON
DELTAY = 17.1
DELTAX = 14.0

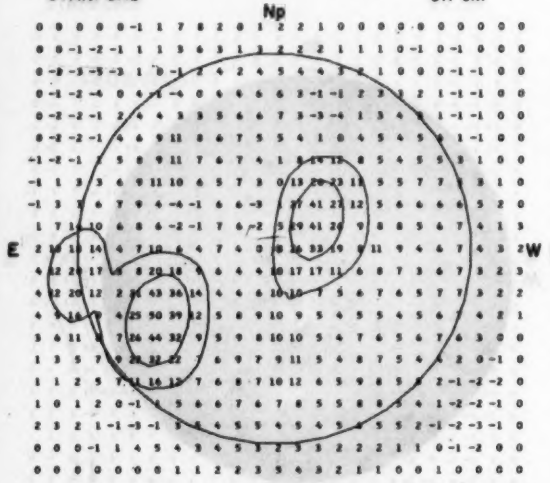
MAGNETOGRAM
Solid-Plus
Dotted-Minus



17.05-18.56 UT

STANFORD

9.1 cm

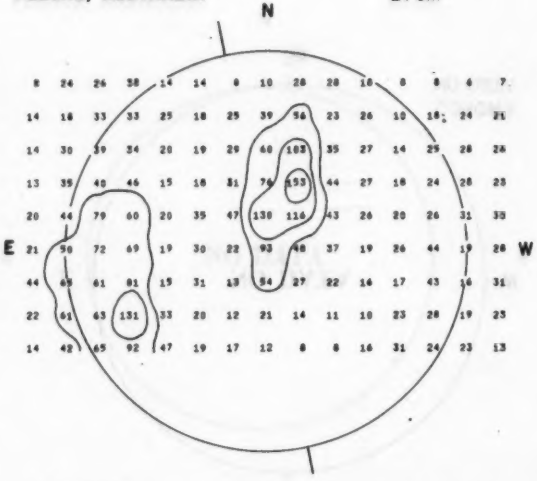


20-21 UT

Brightness Unit 5,000° K

FLEURS, AUSTRALIA

21 cm



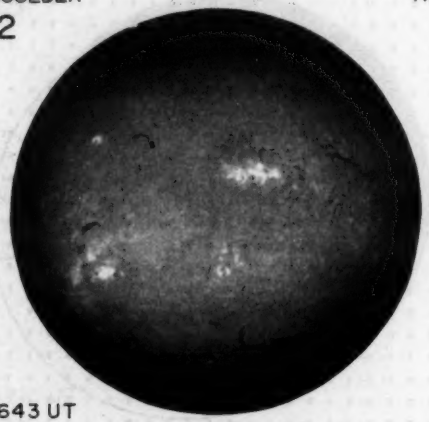
02-03 UT

Resolution 3 Minutes of Arc
Brightness Unit 1,700° K

McMATH-HULBERT

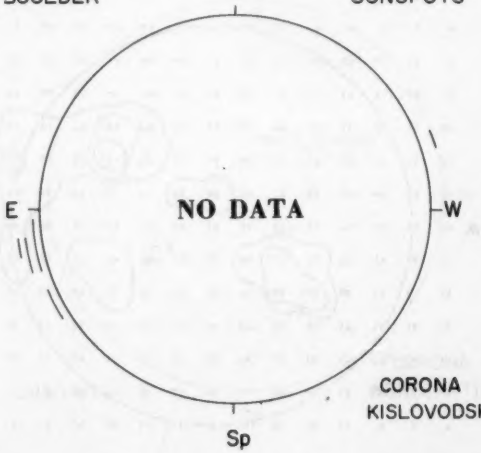
CALCIUM REPORT

BOULDER
12



1643 UT

BOULDER

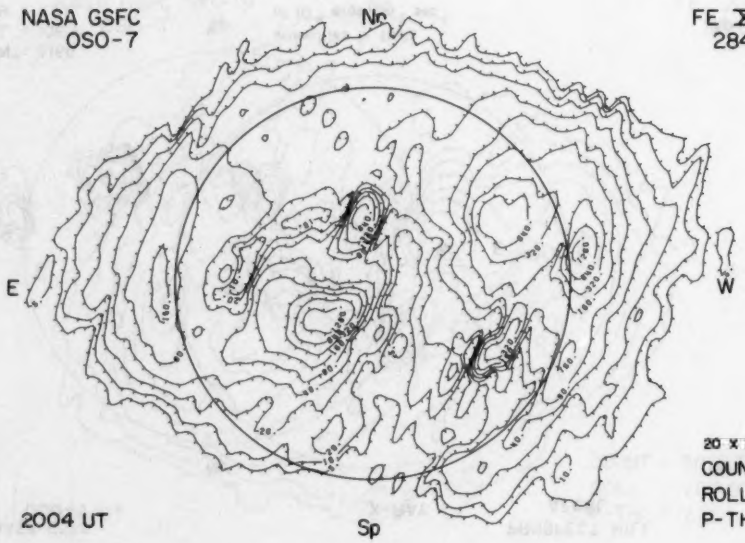


CORONA
KISLOVODSK

NRL
OSO-7

0850 UT

NASA GSFC
OSO-7



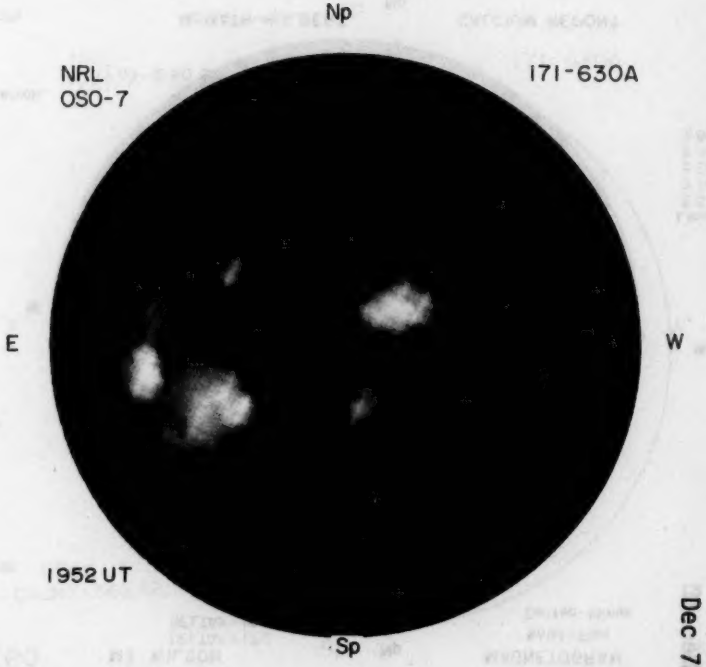
2004 UT

FE XV
284A

20 X 20 ARCSEC APERTURE
COUNT = 109231
ROLL = 108.6°
P-TH = 7.21

NRL
OSO-7

171-630A



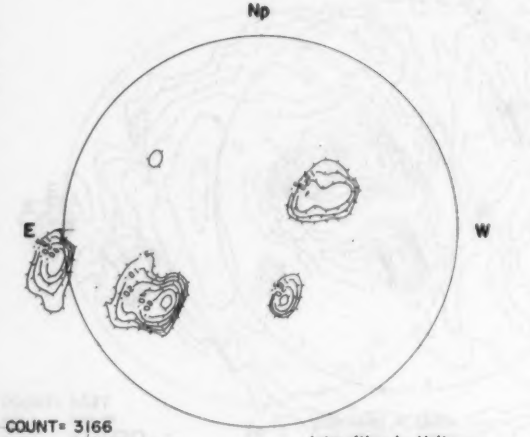
1952 UT

45
Dec 72

DECEMBER 13, 1972 (P= 11.06 B_o= -0.72 L_o= 91.60

NASA GSFC
OSO-7

X-RAY



COUNT= 3166
ROLL = 106.9°
P-TH = 7.21

0517 UT

Intensities in Units of 10^{-6} ergs cm^{-2} sec^{-1}

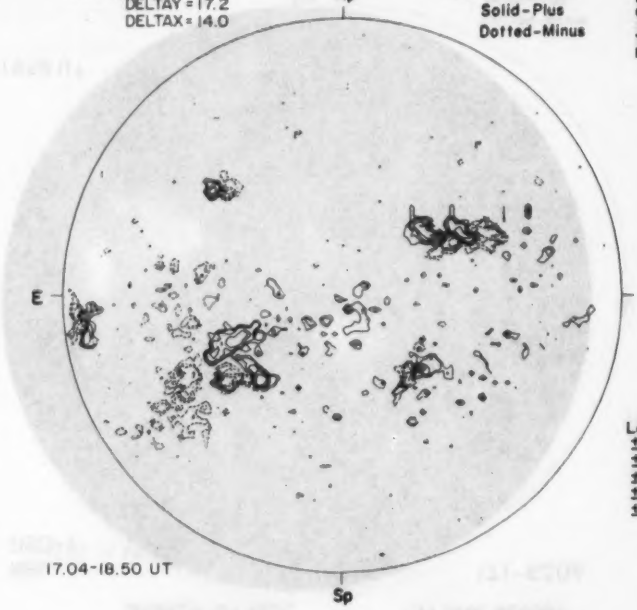
PROSPECT HILL
AFCRL

8.6 mm

Contours in Intervals of 200° K

MT. WILSON
DELTAY = 17.2
DELTAX = 14.0

MAGNETOGRAM
Solid-Plus
Dotted-Minus

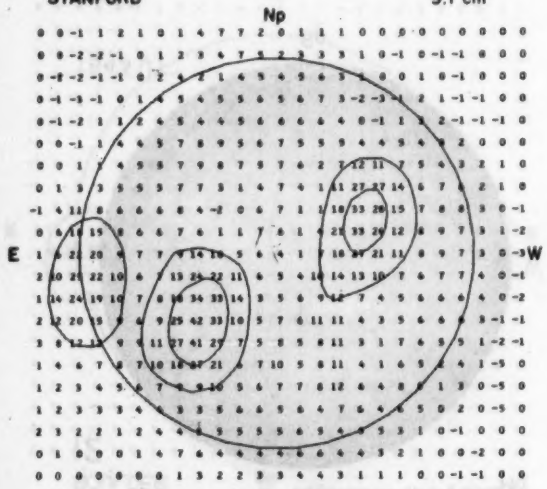


Levels
±5
±10
±20
±40
±80

17.04-18.50 UT

STANFORD

9.1 cm

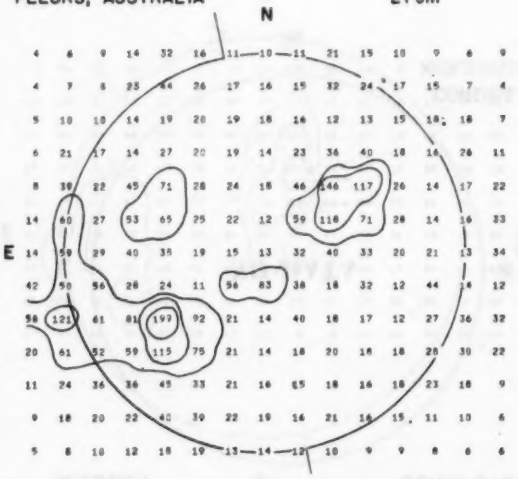


20-21 UT

Brightness Unit 5,000° K

FLEURS, AUSTRALIA

21 cm



02-03 UT

Resolution 3 Minutes of Arc
Brightness Unit 1,700° K

McMATH-HULBERT

CALCIUM REPORT

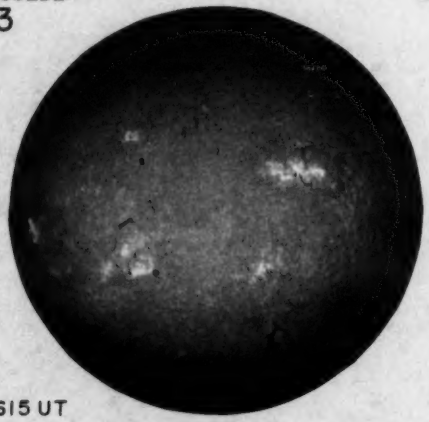
20-21 UT

02-03 UT Brightness Unit 1,700° K

BOULDER
13

Np

Hα



E

W

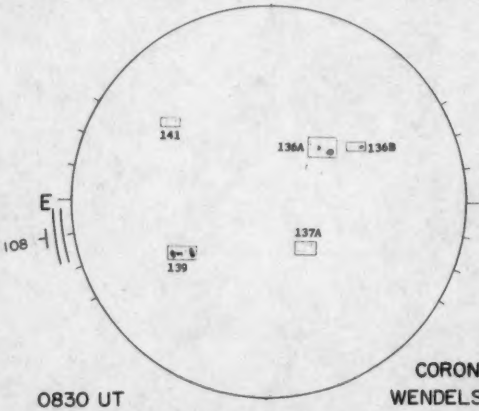
1615 UT

Sp

CANARY ISLAND

Np

SUNSPOTS



E

W

0830 UT

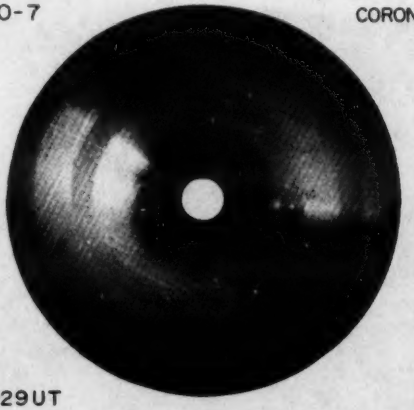
CORONA
WENDELSTEIN

Sp

NRL
OSO-7

Np

WHITE-LIGHT
CORONA



E

W

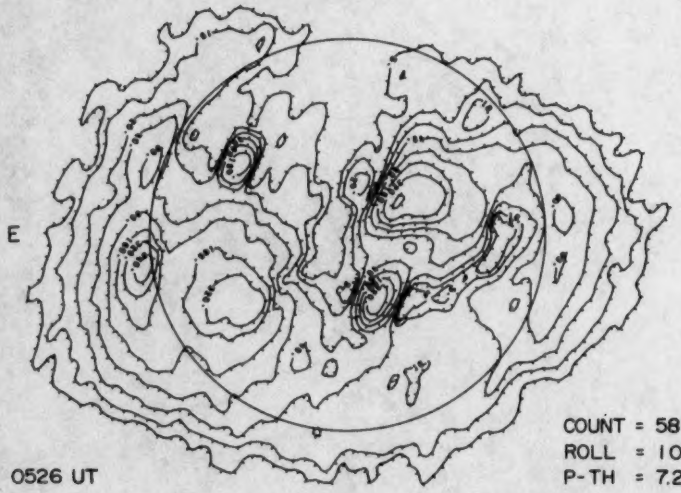
0929UT

Sp

NASA GSFC
OSO-7

Np

FE XV
284A



E

W

COUNT = 58327
ROLL = 106.9°
P-TH = 7.21

0526 UT

Sp

Np

NRL
OSO-7

171-630A

E

W

0506 UT
COUNT=66242

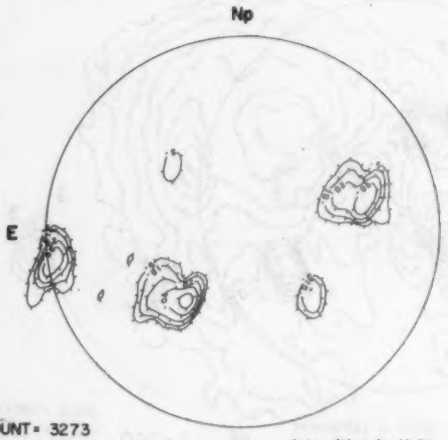
Sp

47
Dec 72

DECEMBER 14, 1972 (P= 10.61 B_o = -0.85 L_o = 78.43

NASA GSFC
OSO-7

X-RAY



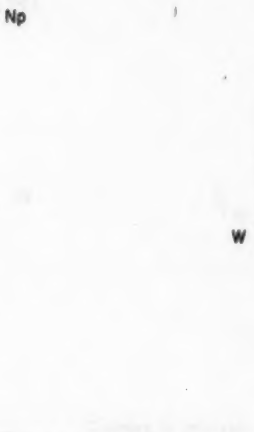
COUNT = 3273
ROLL = 106.9°
P-TH = 7.19

0413 UT

Intensities in Units of 10^{-6} ergs cm^{-2} sec^{-1}

PROSPECT HILL
AFCRL

8.6 mm

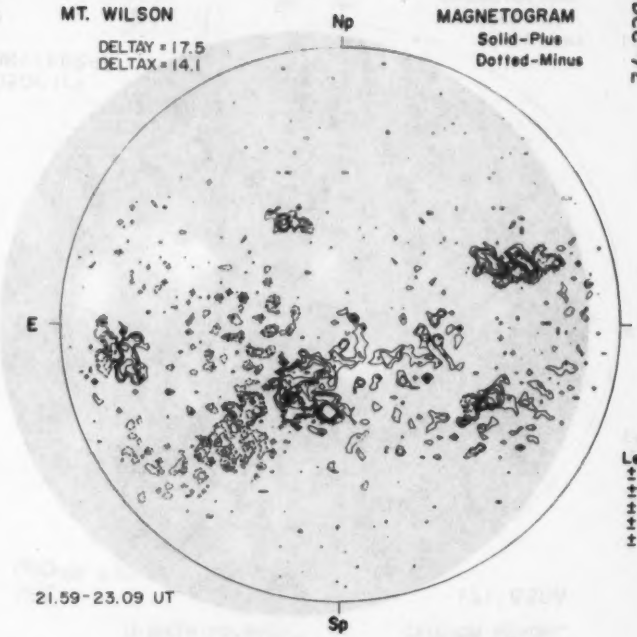


Contours in Intervals of 200° K

MT. WILSON

MAGNETOGRAM
Solid-Plus
Dotted-Minus

DELTAY = 17.5
DELTAX = 14.1

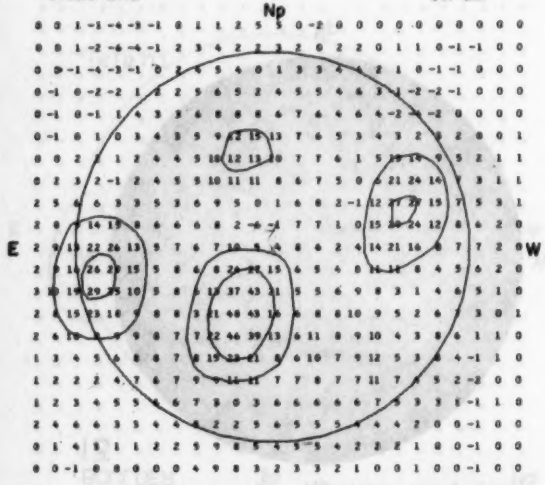


Levels
±5
±10
±20
±40
±80

21.59-23.09 UT

STANFORD

9.1 cm

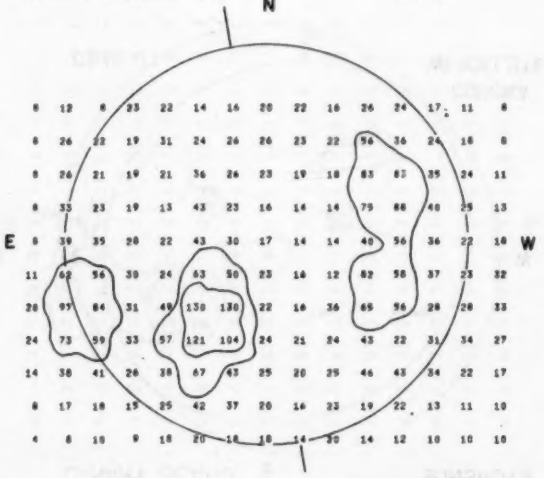


Brightness Unit 5,000° K

20-21 UT

FLEURS, AUSTRALIA

21 cm

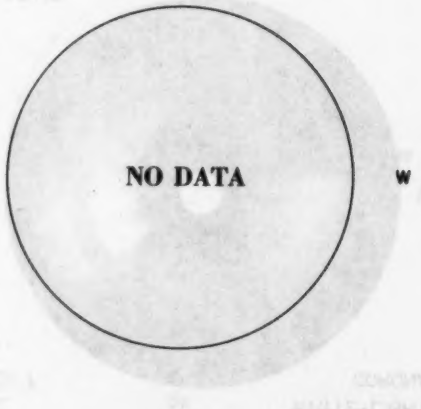


Resolution 3 Minutes of Arc
Brightness Unit 1,700° K

02-03 UT

McMATH-HULBERT

CALCIUM REPORT



20-21 UT
Brightness Unit 5,000° K

02-03 UT
Resolution 3 Minutes of Arc
Brightness Unit 1,700° K

BOULDER
14

Np

Hα

E

W

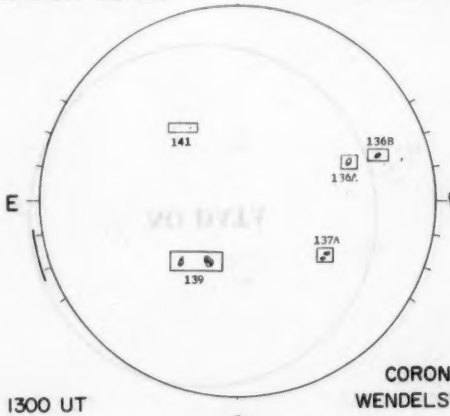
1701 UT

Sp

CANARY ISLAND

Np

SUNSPOTS



E

W

1300 UT

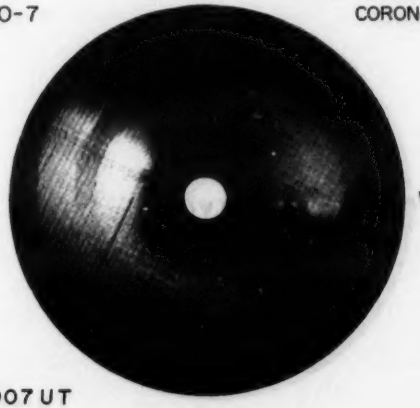
CORONA
WENDELSTEIN

Sp

NRL
OSO-7

Np

WHITE-LIGHT
CORONA



E

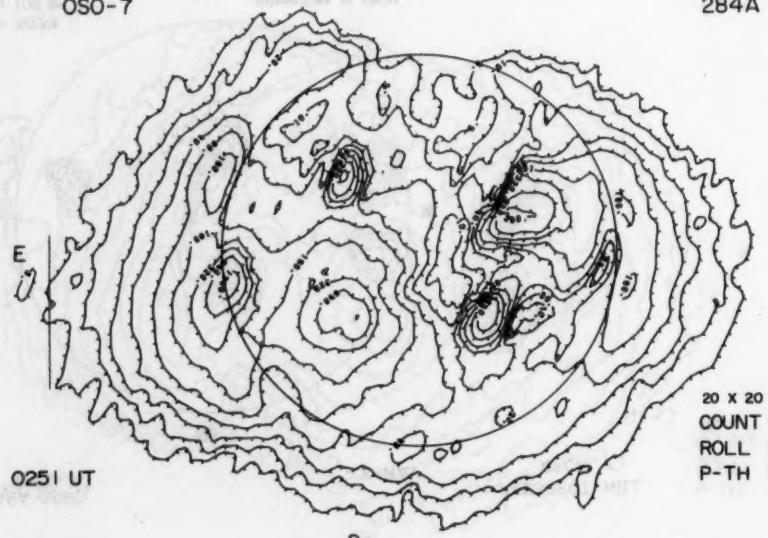
W

1007 UT

Sp

NASA GSFC
OSO-7

Np



E

0251 UT

Sp

FE XV
284A

20 X 20 ARCSEC APERTURE
COUNT = 122518
ROLL = 106.9°
P-TH = 7.19

Np

NRL
OSO-7

171-630A

E

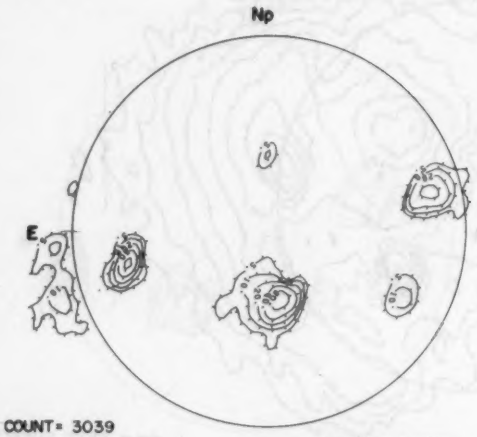
W

2227 UT
COUNT = 69582

DECEMBER 15, 1972 (P= 10.16 B_o = -0.97 L_o = 65.25

NASA GSFC
OSO-7

X-RAY



COUNT= 3039
ROLL = 106.8°
P-TH = 7.16

2012 UT

Intensities in Units of 10^{-6} ergs cm^{-2} sec^{-1}

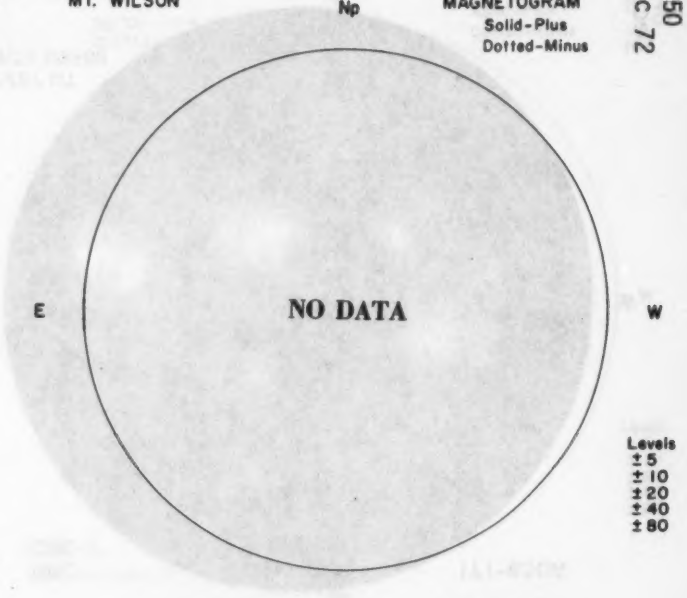
PROSPECT HILL
AFCRL

8.6 mm

Contours in Intervals of 200° K

MT. WILSON

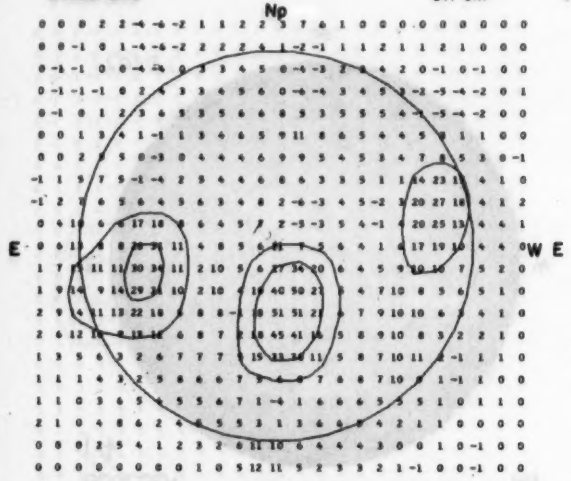
MAGNETOGRAM
Solid-Plus
Dotted-Minus



Levels
±5
±10
±20
±40
±80

STANFORD

9.1 cm



20-21 UT

Brightness Unit 5,000° K

FLEURS, AUSTRALIA

21 cm

02-03 UT

Resolution 3 Minutes of Arc
Brightness Unit 1,700° K

McMATH-HULBERT

CALCIUM REPORT

20-21 UT

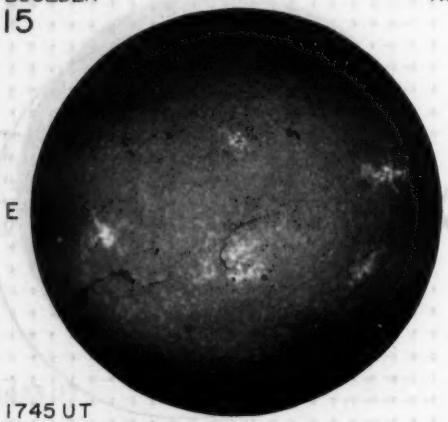
02-03 UT

Resolution 3 Minutes of Arc
Brightness Unit 1,700° K

BOULDER
15

Np

Hα



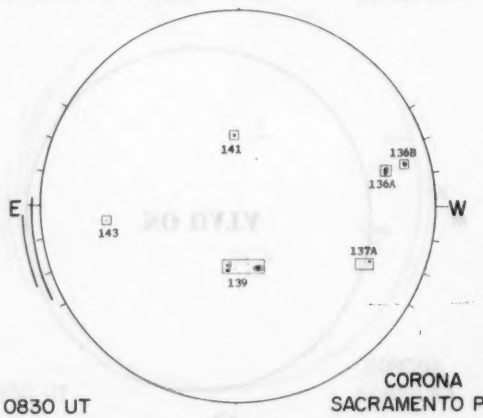
1745 UT

Sp

CANARY ISLAND

Np

SUNSPOTS



0830 UT

Sp

NRL
OSO-7

Np

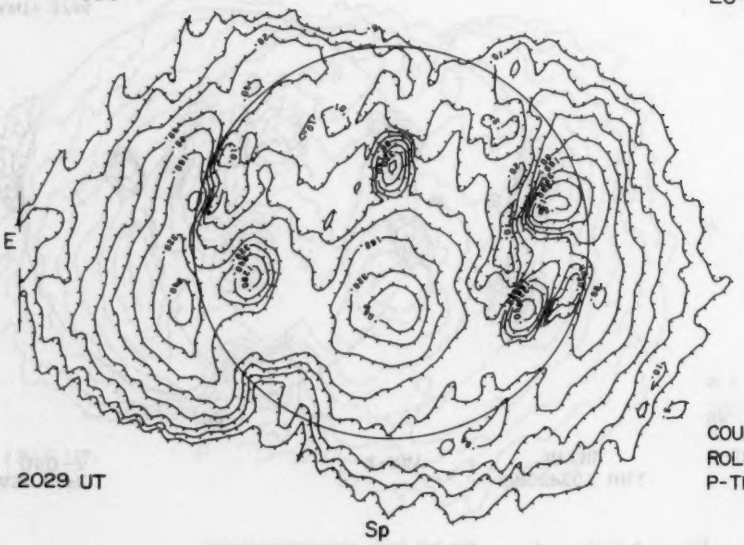
WHITE-LIGHT
CORONA

CORONA
SACRAMENTO PEAK 1541 UT

Sp

NASA GSFC
OSO-7

Np



2029 UT

Sp

FE XV
284A

COUNT = 122379
ROLL = 106.8°
P-TH = 7.16

Np

NRL
OSO-7

171-630A

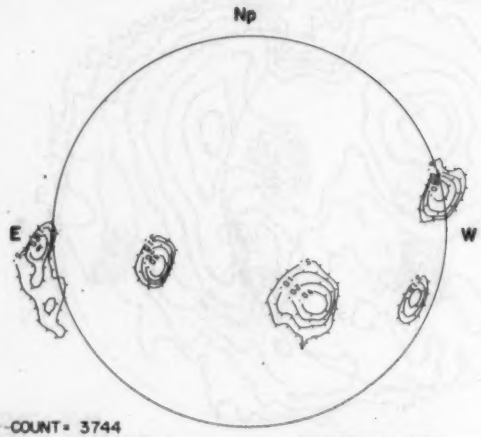
2305 UT
COUNT = 70805

Sp

DECEMBER 16, 1972 (P = 9.70 B_o = -1.10 L_o = 52.08

NASA GSFC
OSO-7

X-RAY



COUNT = 3744
ROLL = 106.9°
P-TH = 7.15

2042 UT

Intensities in Units of 10^{-6} ergs cm^{-2} sec^{-1}

PROSPECT HILL
AFCRL

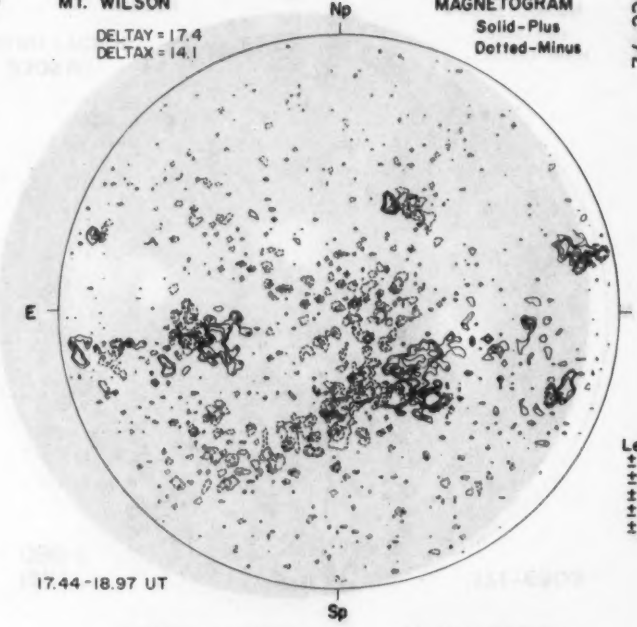
8.6 mm

Contours in Intervals of 200° K

MT. WILSON

MAGNETOGRAM
Solid-Plus
Dotted-Minus

DELTAY = 17.4
DELTAX = 14.1

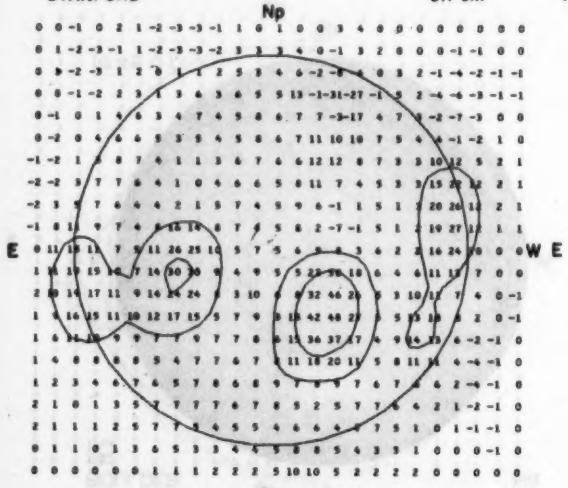


Levels
±5
±10
±20
±40
±80

17.44-18.97 UT

STANFORD

9.1 cm



20-21 UT

Brightness Unit 5,000° K

FLEURS, AUSTRALIA

21 cm

02-03 UT

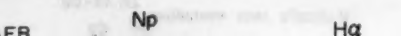
Resolution 3 Minutes of Arc
Brightness Unit 1,700° K

McMATH-HULBERT

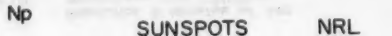
CALCULUM REPORT

RAMEY AFB

Hα



CANARY ISLAND



SUNSPOTS

NRL

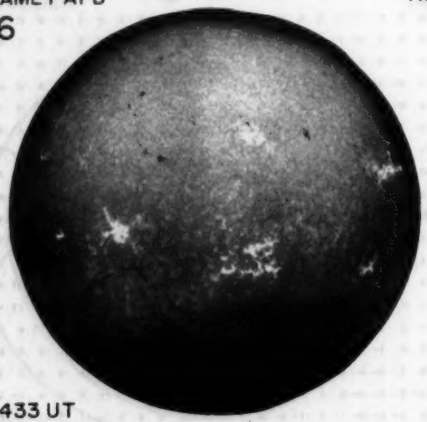
WHITE-LIGHT

20-21 UT

02-03 UT Brightness Unit 1,700° K

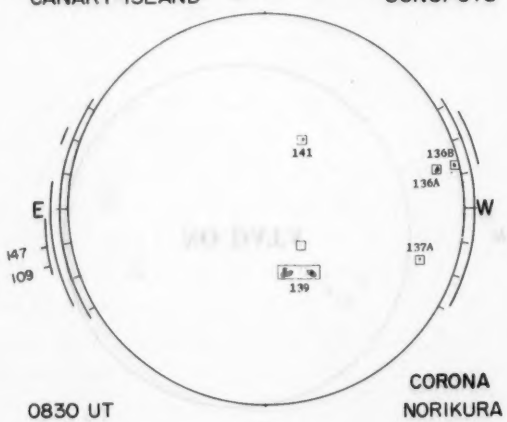
RAMEY AFB Np Hα

16



1433 UT Sp

CANARY ISLAND Np SUNSPOTS

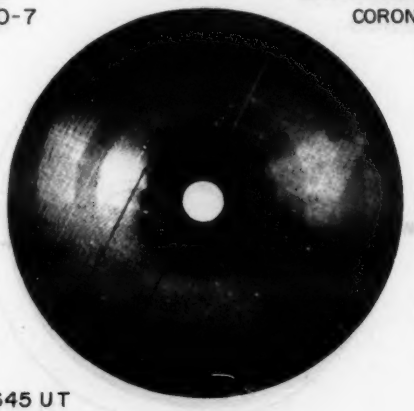


0830 UT Sp

CORONA NORIKURA

NRL Np WHITE-LIGHT CORONA

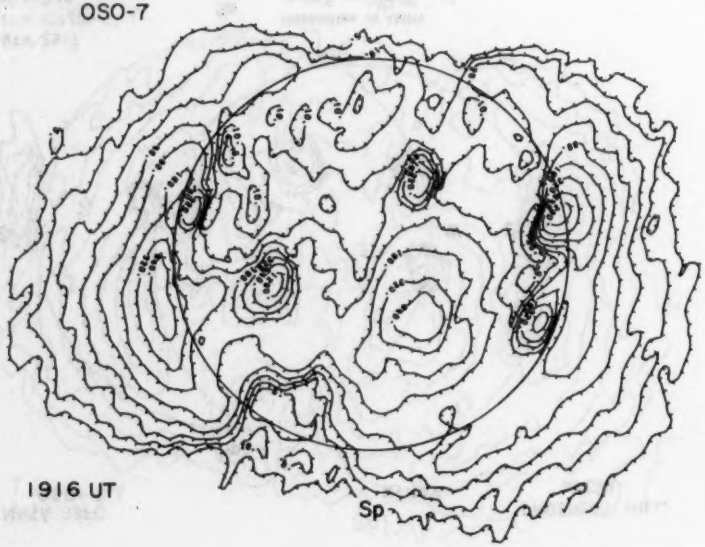
OSO-7



0645 UT Sp

NASA GSFC Np

OSO-7



1916 UT Sp

FE XV 284A

20 X 20 ARCSEC APERTURE

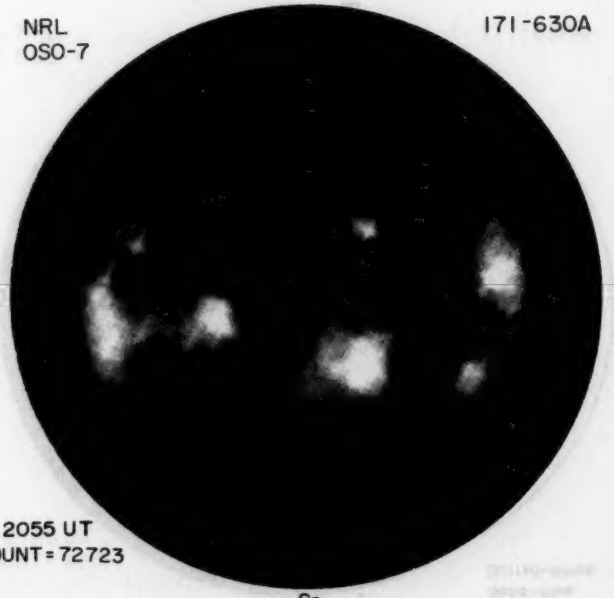
COUNT = 122350

ROLL = 106.9°

P-TH = 7.15

NRL Np 171-630A

OSO-7



2055 UT Sp

COUNT = 72723

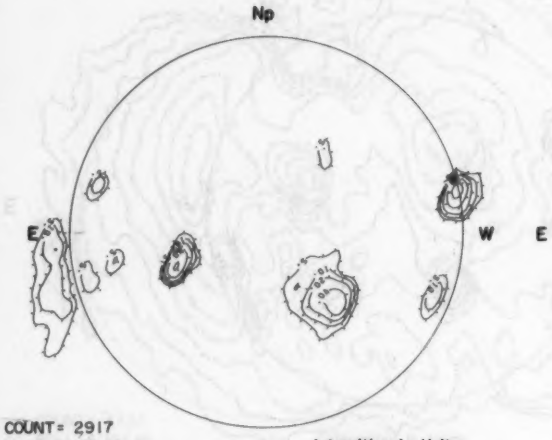
53

Dec 72

DECEMBER 17, 1972 (P= 9.24 B_o = -1.23 L_o = 38.90

NASA GSFC
OSO-7

X-RAY



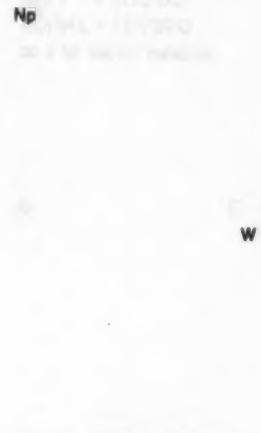
COUNT= 2917
ROLL = 107.0°
P-TH = 7.14

0301 UT

Intensities in Units of 10^{-6} ergs cm^{-2} sec^{-1}

PROSPECT HILL
AFCRL

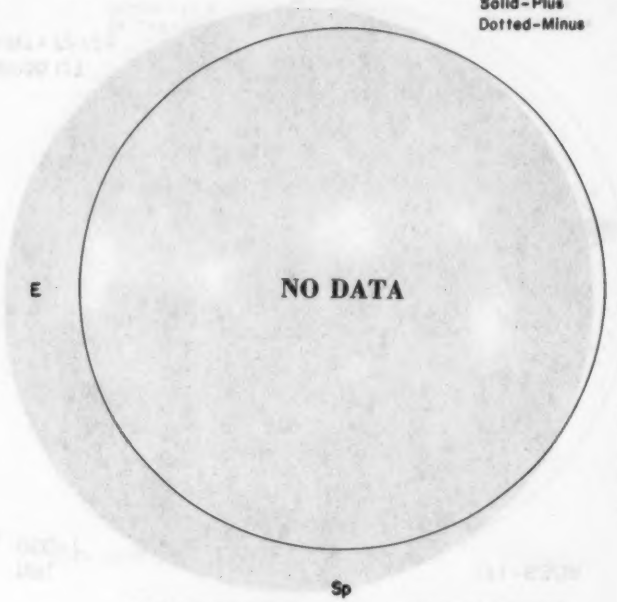
8.6 mm



Contours in Intervals of 200° K

MT. WILSON

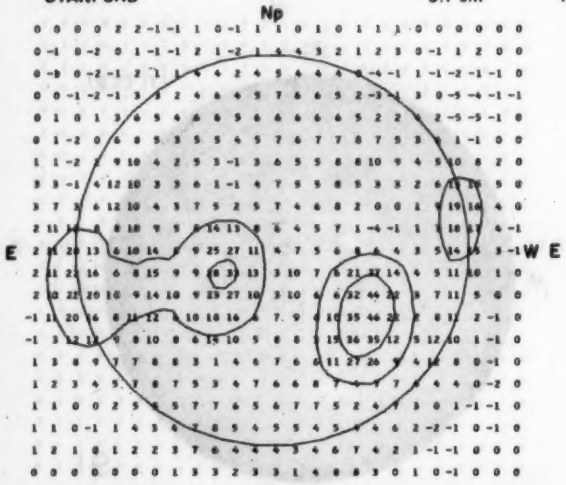
MAGNETOGRAM
Solid-Plus
Dotted-Minus



Levels
±5
±10
±20
±40
±80

STANFORD

9.1 cm



20-21 UT

Brightness Unit 5,000° K

FLEURS, AUSTRALIA

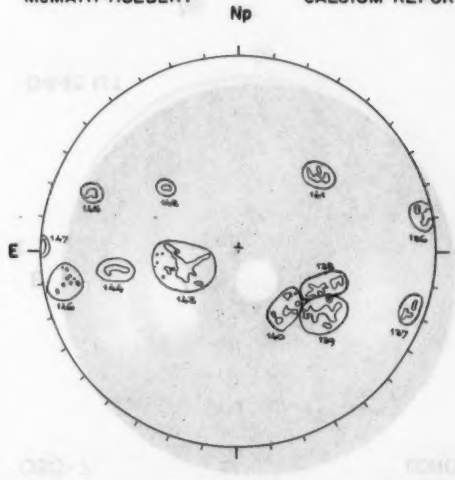
21 cm

02-03 UT

Resolution 3 Minutes of Arc
Brightness Unit 1,700° K

McMATH-HULBERT

CALCIUM REPORT



FAIR	M
36 - 2900	-3.0
37 - 1100	-2.5
38 - 1400	-2.5
39 - 1700	-3.0
41 - 0700	-2.5
43 - 2200	-3.5
44 - 0800	-3.0
45 - 0600	-3.0

1430 UT

20-21 UT Brightness Unit 5,000° K

02-03 UT Resolution 3 Minutes of Arc Brightness Unit 1,700° K

1430 UT

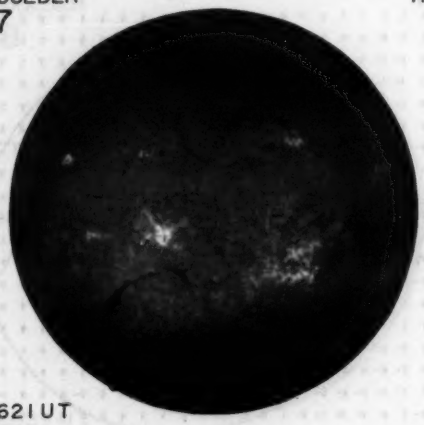
BOULDER
17

Np

Hα

E

W



1621 UT

Sp

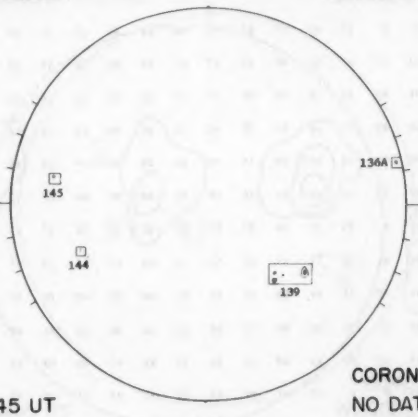
BOULDER

Np

SUNSPOTS

E

W



1645 UT

Sp

CORONA
NO DATA

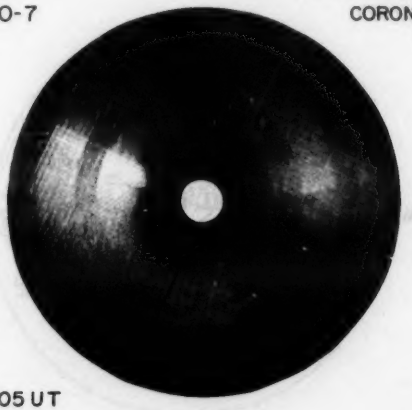
NRL
OSO-7

Np

WHITE-LIGHT
CORONA

E

W



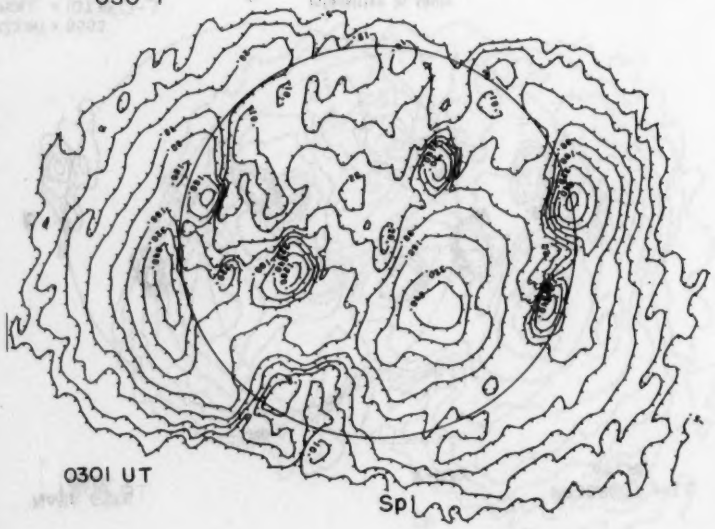
1505 UT

Sp

NASA GSFC
OSO-7

Np

E



0301 UT

Sp

FE XV
284A

NRL
OSO-7

Np

171-630A

W

E

W

20 X 20 ARCSEC APERTURE
COUNT = 116002
ROLL = 107.0°
P-TH = 7.14

2125 UT
COUNT = 82567

Sp

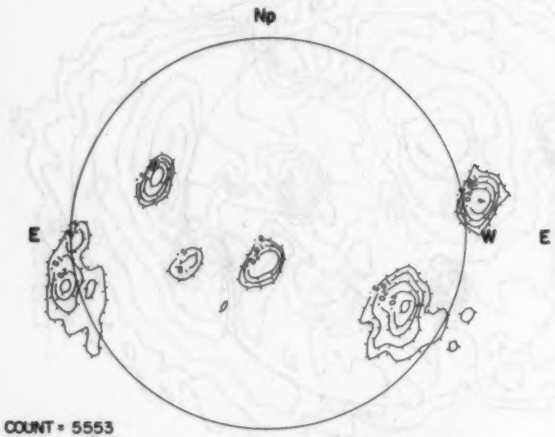
55
Dec 72

DECEMBER 18, 1972 (P= 8.78 B_o = -1.35 L_o = 25.73

56
Dec 72

NASA GSFC
OSO-7

X-RAY



COUNT = 5553
ROLL = 107.5°
P-TH = 7.10

1748 UT

Intensities in Units of 10^{-6} ergs cm^{-2} sec^{-1}

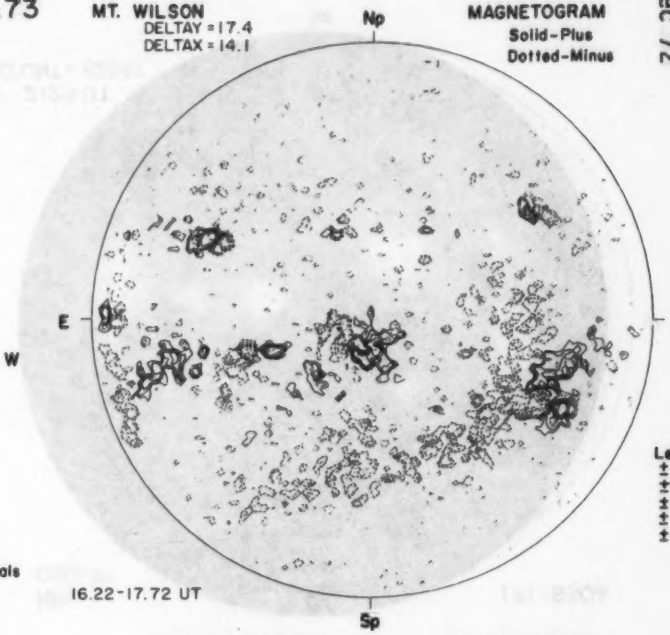
PROSPECT HILL
AFCRL

8.6 mm

Contours in Intervals of 200° K

MT. WILSON
DELTAY = 17.4
DELTAX = 14.1

MAGNETOGRAM
Solid-Plus
Dotted-Minus

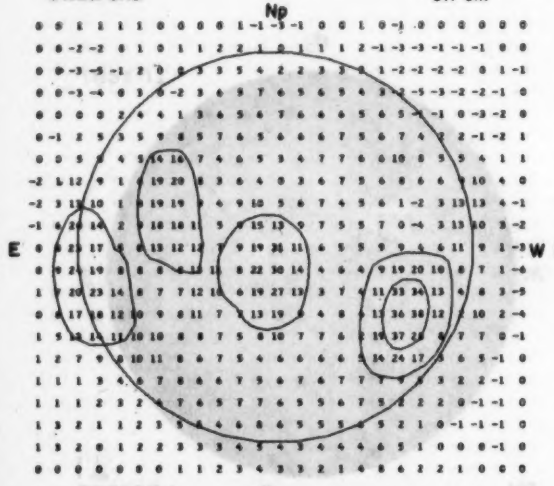


Levels
±5
±10
±20
±40
±80

16.22-17.72 UT

STANFORD

9.1 cm

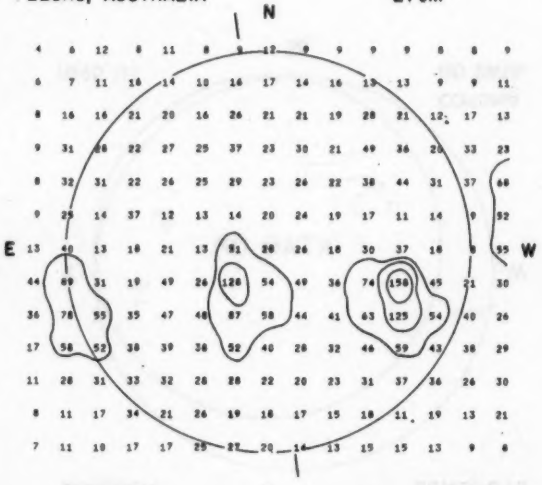


20-21 UT

Brightness Unit 5,000° K

FLEURS, AUSTRALIA

21 cm

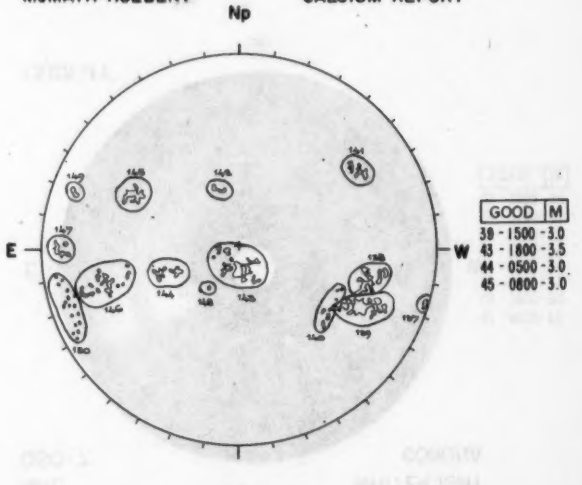


02-03 UT

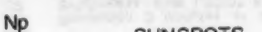
Resolution 3 Minutes of Arc
Brightness Unit 1,700° K

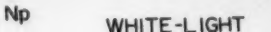
McMATH-HULBERT

CALCIUM REPORT



1950 UT





WHITE-LIGHT

20-21 UT Brightness Unit 5,000° K

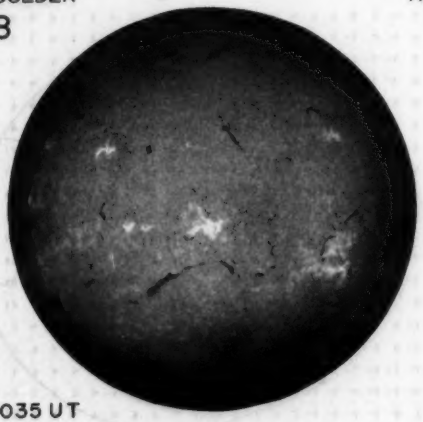
02-03 UT Resolution 3 Minutes of Arc Brightness Unit 1,700° K

1950 UT

BOULDER
18

Np

Hα



E W

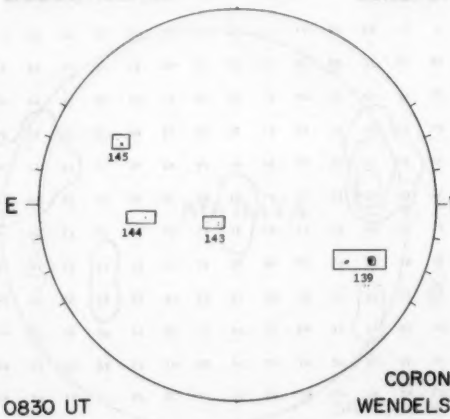
2035 UT

Sp

CANARY ISLAND

Np

SUNSPOTS



E W

0830 UT

CORONA
WENDELSTEIN

Sp

NRL
OSO-7

Np

WHITE-LIGHT
CORONA

E NO DATA W

Sp

NASA GSFC
OSO-7

Np

E W

1804 UT

Sp

FE XV
284A

20 X 20 ARCSEC APERTURE
COUNT = 98880
ROLL = 107.5°
P-TH = 7.10

Np

NRL
OSO-7

171-630A

E W

1800 UT
COUNT = 58077

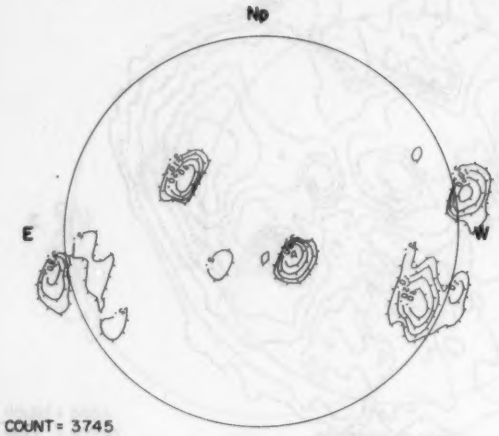
Sp

57
Dec 72

DECEMBER 19, 1972 (P= 8.32 B_o = -1.48 L_o = 12.56

NASA GSFC
OSO-7

X-RAY



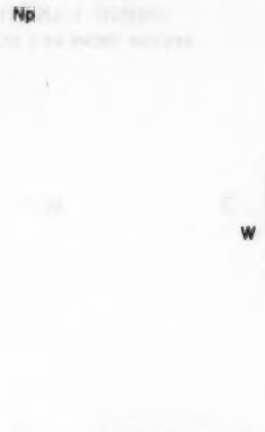
COUNT = 3745
ROLL = 107.0°
P-TH = 7.08

1644 UT

Intensities in Units of 10^{-6} ergs cm^{-2} sec^{-1}

PROSPECT HILL
AFCRL

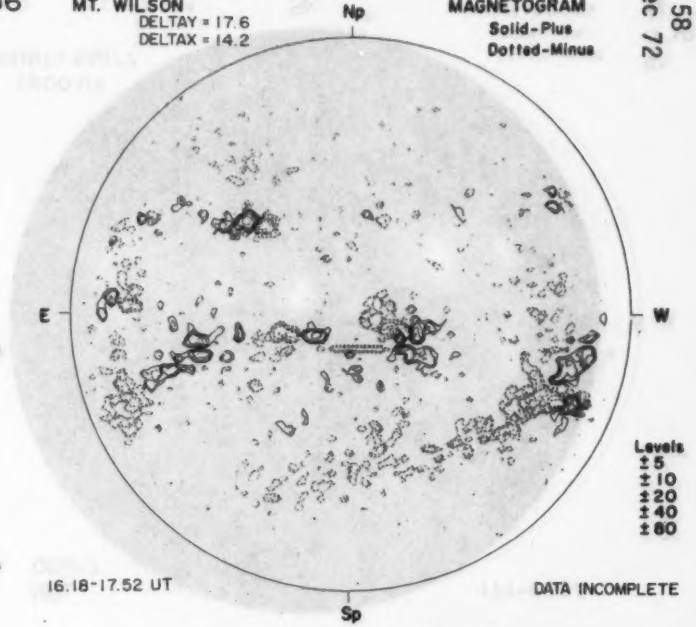
8.6 mm



Contours in Intervals of 200° K

MT. WILSON
DELTAY = 17.6
DELTAX = 14.2

MAGNETOGRAM
Solid-Plus
Dotted-Minus



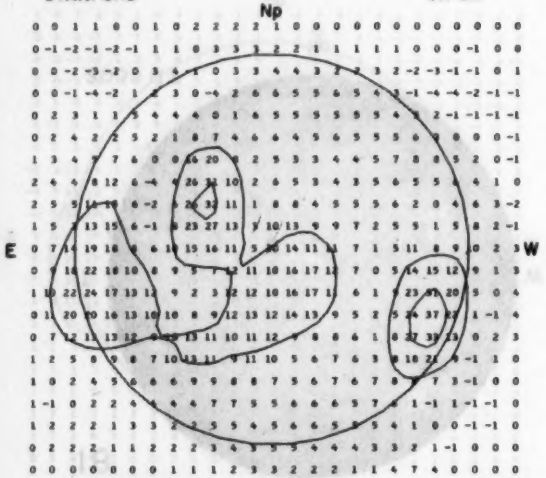
Levels
±5
±10
±20
±40
±80

16.18-17.52 UT

DATA INCOMPLETE

STANFORD

9.1 cm

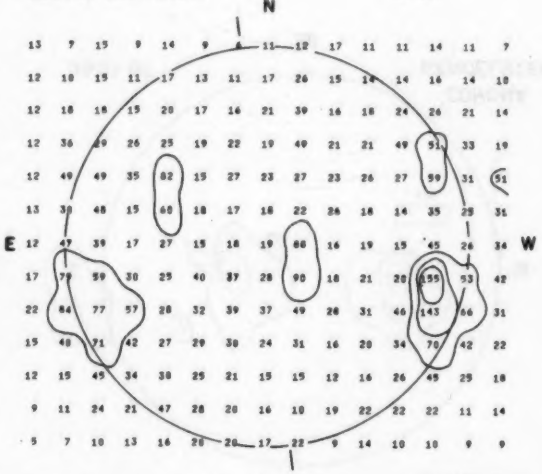


20-21 UT

Brightness Unit 5,000° K

FLEURS, AUSTRALIA

21 cm

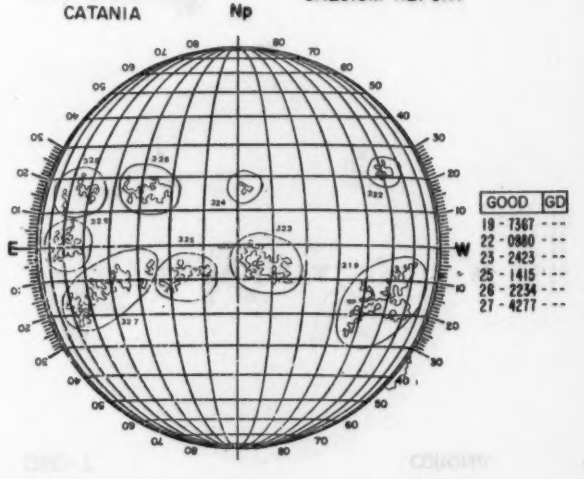


02-03 UT

Resolution 3 Minutes of Arc
Brightness Unit 1,700° K

CALCIUM REPORT

CATANIA



1100 UT

20-21 UT

02-03 UT

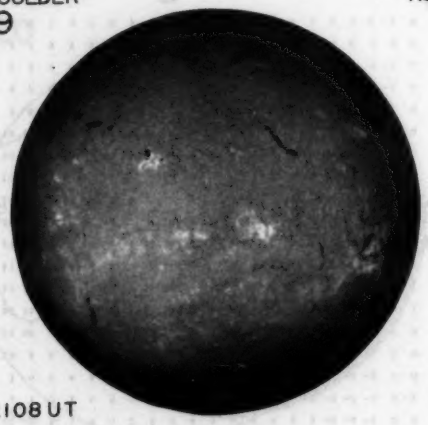
Resolution 3 Minutes of Arc
Brightness Unit 1,700° K

1100 UT

BOULDER
19

Np

Hα



E

W

Sp

2108 UT

BOULDER

Np

SUNSPOTS

E

NO DATA

W

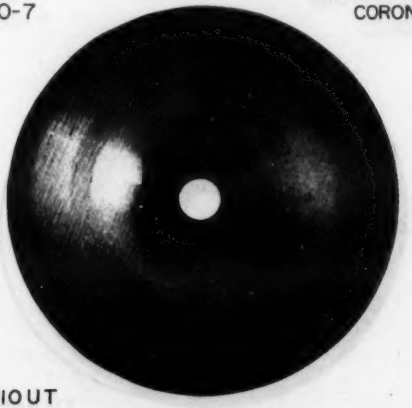
Sp

CORONA
SACRAMENTO PEAK 0410 UT

NRL
OSO-7

Np

WHITE-LIGHT
CORONA



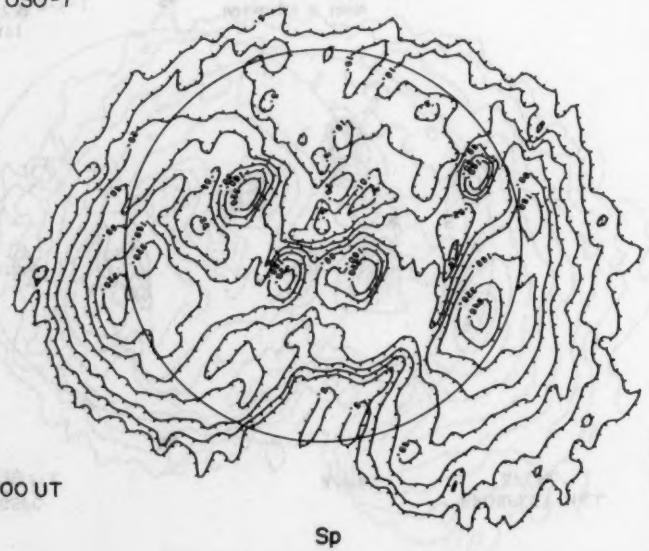
E

W

Sp

NASA GSFC
OSO-7

Np



E

W

Sp

1700 UT

FE XV
284A

COUNT = 68490
ROLL = 107.0°
P-TH = 7.08

NRL
OSO-7

Np

171-630A

E

W

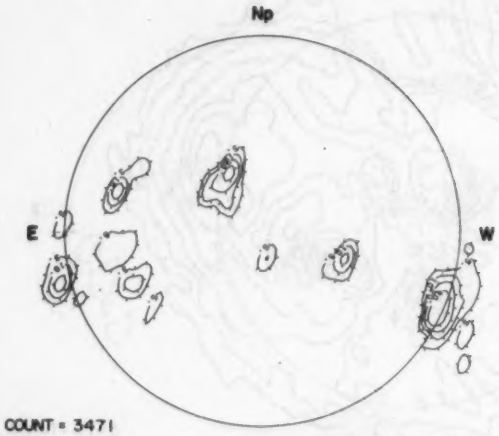
Sp

2101 UT
COUNT = 72209

DECEMBER 20, 1972 (P = 7.85 B_o = -1.60 L_o = 359.38

NASA GSFC
OSO-7

X-RAY



COUNT = 3471
ROLL = 107.3°
P-TH = 7.05

1430 UT

Intensities in Units of 10^{-6} ergs cm^{-2} sec^{-1}

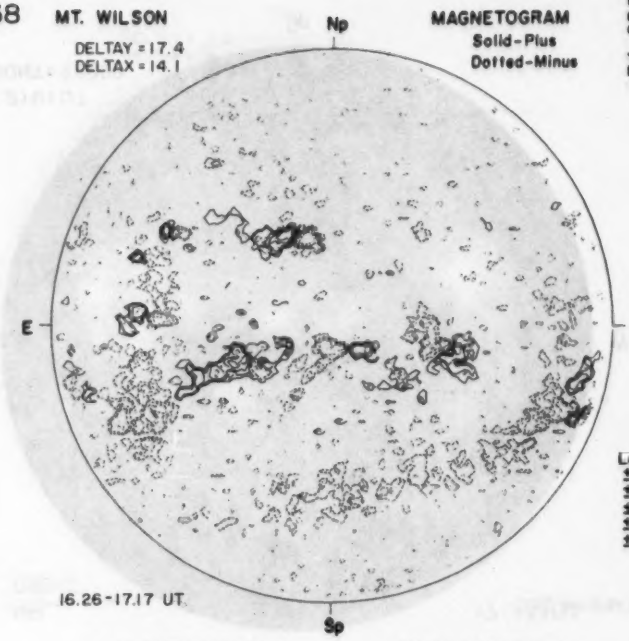
PROSPECT HILL
AFCRL

8.6 mm

Contours in Intervals of 200° K

MT. WILSON
DELTAY = 17.4
DELTAX = 14.1

MAGNETOGRAM
Solid-Plus
Dotted-Minus

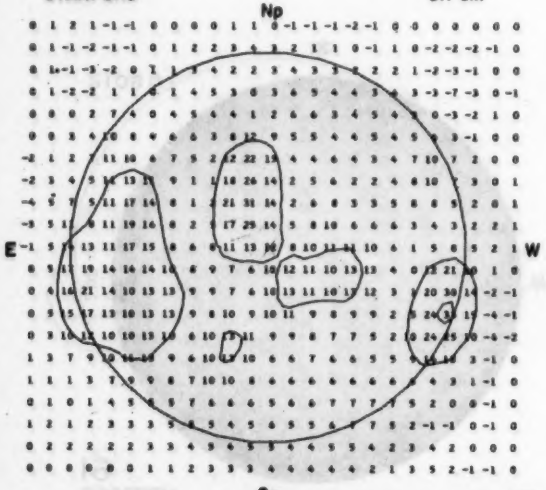


Levels
±5
±10
±20
±40
±80

16.26-17.17 UT

STANFORD

9.1 cm

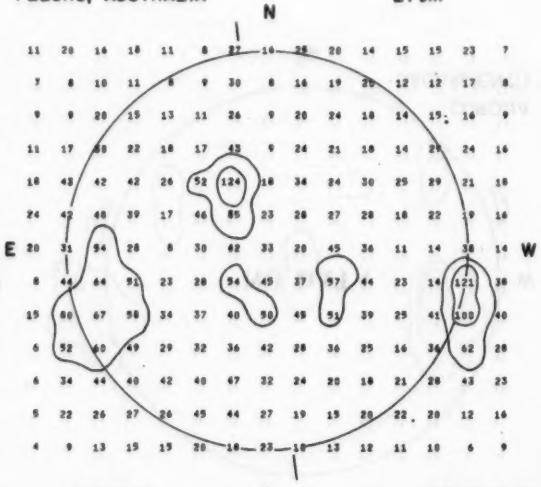


20-21 UT

Brightness Unit 5,000° K

FLEURS, AUSTRALIA

21 cm



02-03 UT

Resolution 3 Minutes of Arc
Brightness Unit 1,700° K

McMATH-HULBERT

CALCIUM REPORT

20-21 UT

02-03 UT

Resolution 3 Minutes of Arc
Brightness Unit 1,700° K

BOULDER
20

Np

Hα

E

W

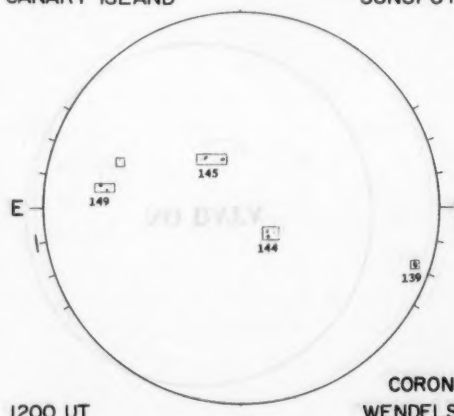
Sp

1831 UT

CANARY ISLAND

Np

SUNSPOTS



1200 UT

Sp

CORONA
WENDELSTEIN

NRL
OSO-7

Np

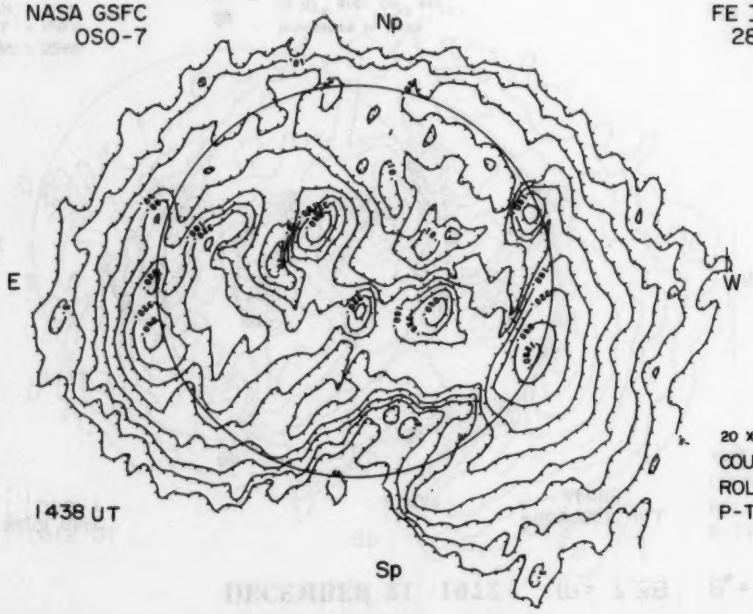
WHITE-LIGHT
CORONA

1056 UT

Sp

NASA GSFC
OSO-7

Np



1438 UT

Sp

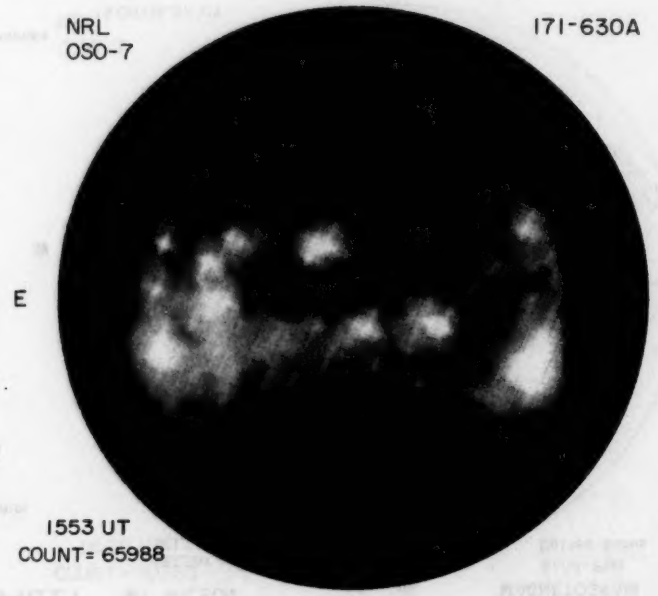
FE XV
284A

20 X 20 ARCSEC APERTURE
COUNT = 124453
ROLL = 107.3°
P-TH = 7.05

Np

NRL
OSO-7

171-630A



1553 UT
COUNT= 65988

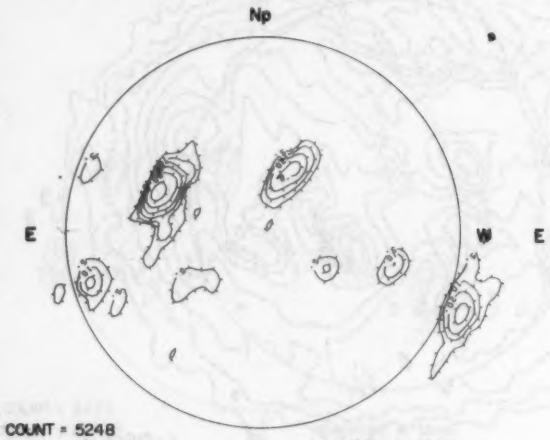
Sp

61
Dec 72

DECEMBER 21, 1972 (P= 7.38 B_o = -1.73 L_o = 346.21

NASA GSFC
OSO-7

X-RAY



COUNT = 5248
ROLL = 106.6°
P-TH = 7.02

1629 UT

Intensities in Units of 10^{-6} ergs cm^{-2} sec^{-1}

PROSPECT HILL
AFCRL

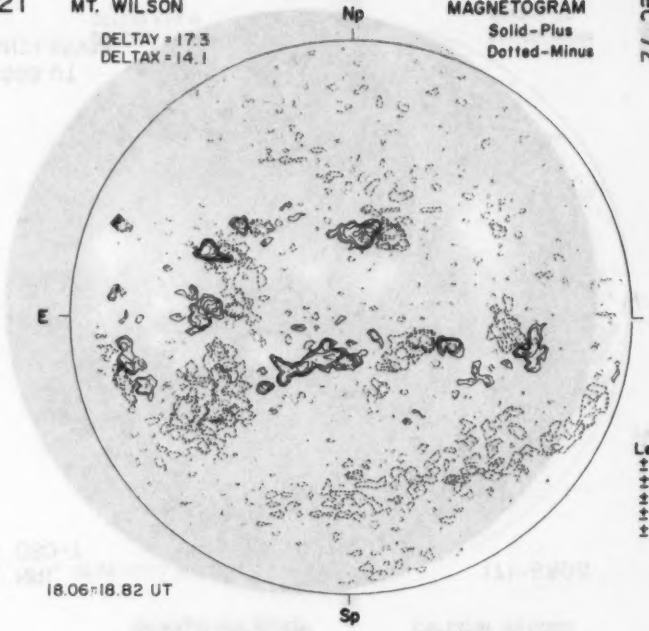
8.6 mm

Contours in Intervals of 200° K

MT. WILSON

MAGNETOGRAM
Solid-Plus
Dotted-Minus

DELTAY = 17.3
DELTAX = 14.1

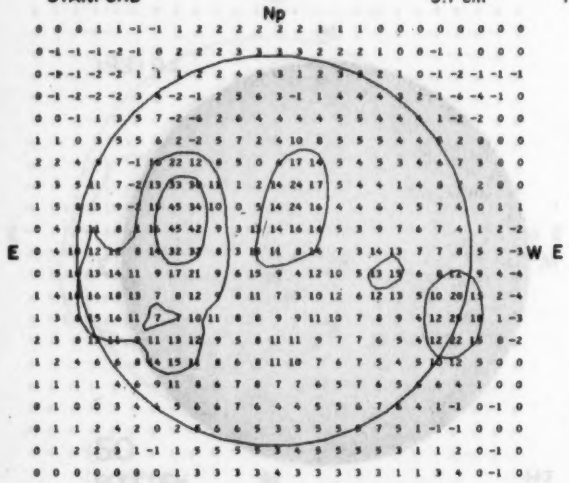


18.06-18.82 UT

Levels
±5
±10
±20
±40
±80

STANFORD

9.1 cm



20-21 UT

Brightness Unit 5,000° K

FLEURS, AUSTRALIA

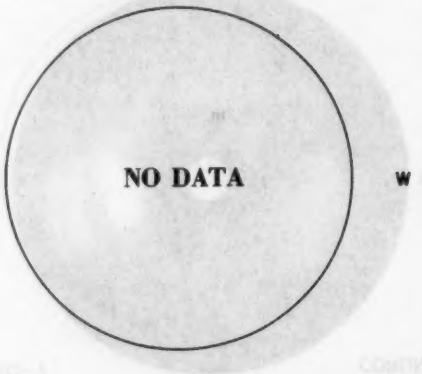
21 cm

02-03 UT

Resolution 3 Minutes of Arc
Brightness Unit 1,700° K

McMATH-HULBERT

CALCIUM REPORT



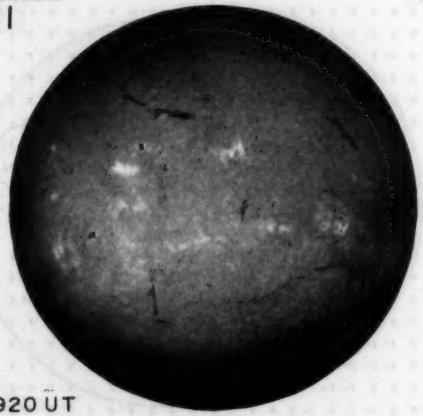
20-21 UT Brightness Unit 5,000° K

02-03 UT Resolution 3 Minutes of Arc Brightness Unit 1,700° K

BOULDER
21

Np

Hα



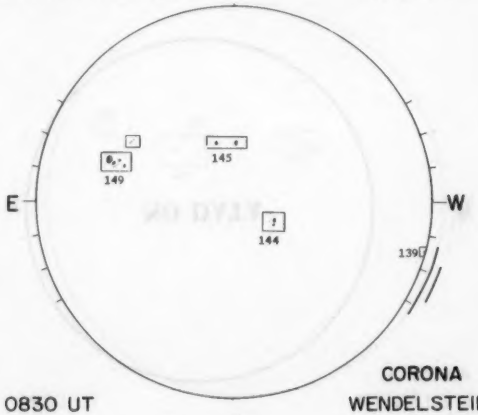
Sp

1920 UT

CANARY ISLAND

Np

SUNSPOTS



CORONA
WENDELSTEIN

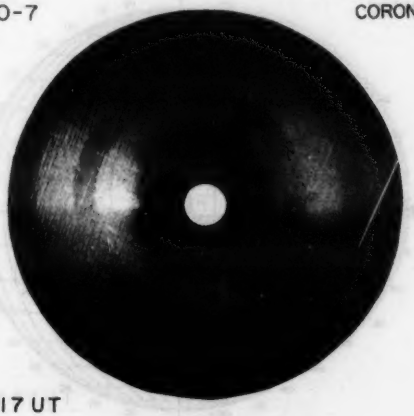
0830 UT

Sp

NRL
OSO-7

Np

WHITE-LIGHT
CORONA

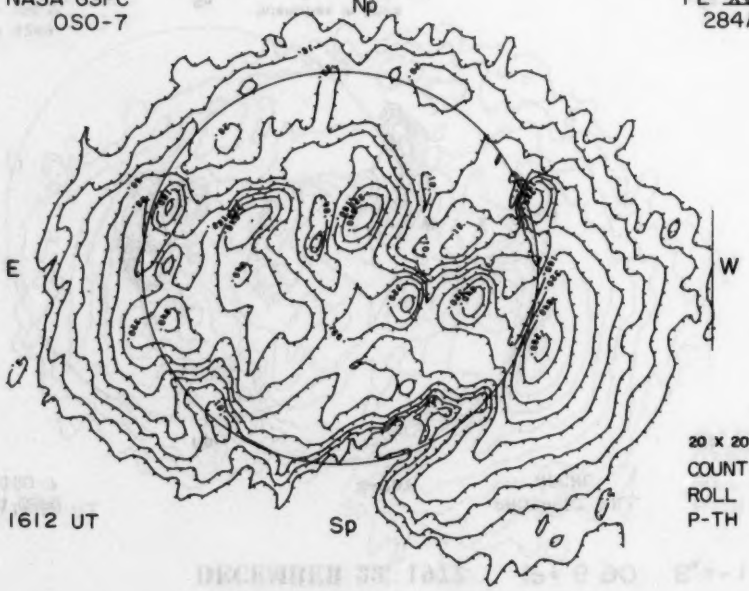


0217 UT

Sp

NASA GSFC
OSO-7

Np



Sp

1612 UT

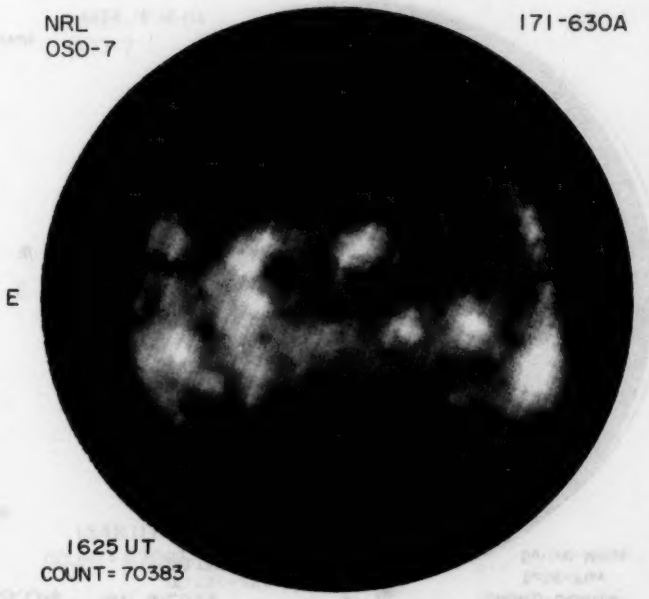
FE XV
284A

20 X 20 ARCSEC APERTURE
COUNT = 135733
ROLL = 106.6°
P-TH = 7.02

Np

NRL
OSO-7

171-630A



Sp

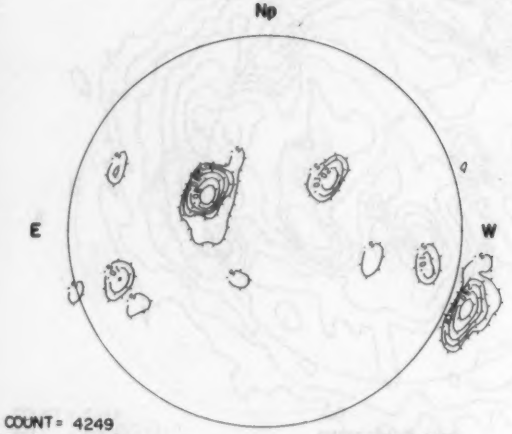
1625 UT
COUNT= 70383

63
Dec 72

DECEMBER 22, 1972 (P= 6.90 B_o = - 1.85 L_o = 333.04

NASA GSFC
OSO-7

X-RAY



COUNT = 4249
ROLL = 106.3°
P-TH = 6.99

1409 UT

Intensities in Units of 10^{-6} ergs cm^{-2} sec^{-1}

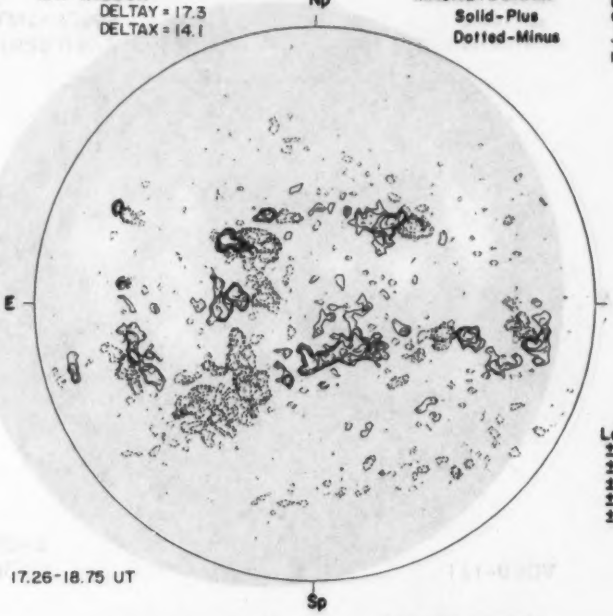
PROSPECT HILL
AFCRL

8.6 mm

Contours in Intervals of 200° K

MT. WILSON
DELTAY = 17.3
DELTAX = 14.1

MAGNETOGRAM
Solid-Plus
Dotted-Minus

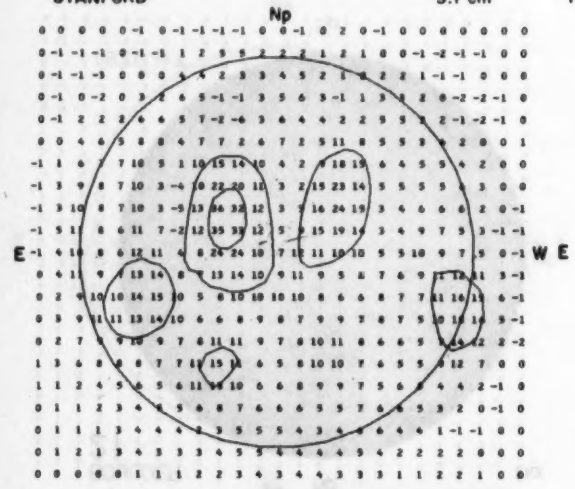


Levels
±5
±10
±20
±40
±80

17.26-18.75 UT

STANFORD

9.1 cm



20-21 UT

Brightness Unit 5,000° K

FLEURS, AUSTRALIA

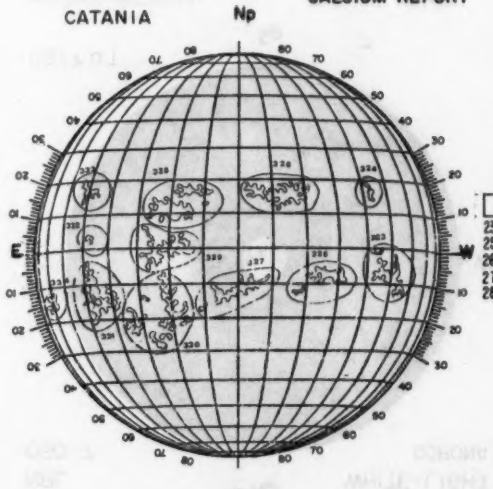
21 cm

02-03 UT

Resolution 3 Minutes of Arc
Brightness Unit 1,700° K

CALCIUM REPORT

CATANIA

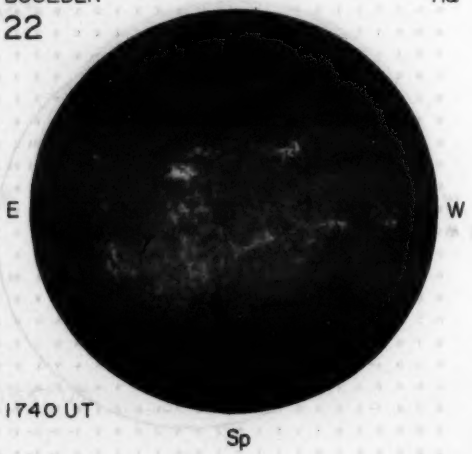


	FAIR	GD
23 - 2555	---	
25 - 1350	---	
26 - 2676	---	
27 - 1749	---	
28 - 2800	---	

0920 UT

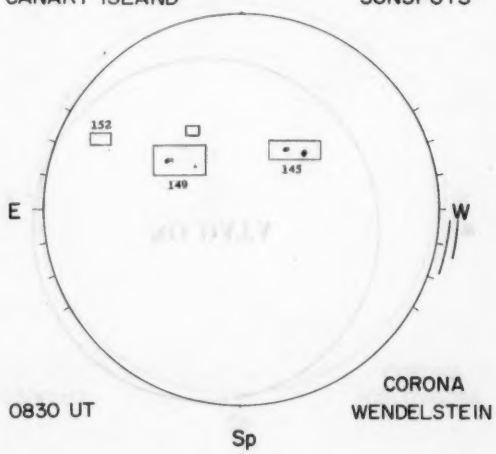
20-21 UT 02-03 UT Brightness Unit 1,700° K 0920 UT

BOULDER
22



1740 UT

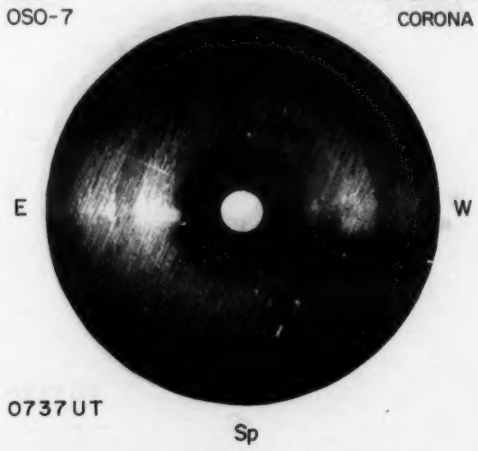
CANARY ISLAND



0830 UT

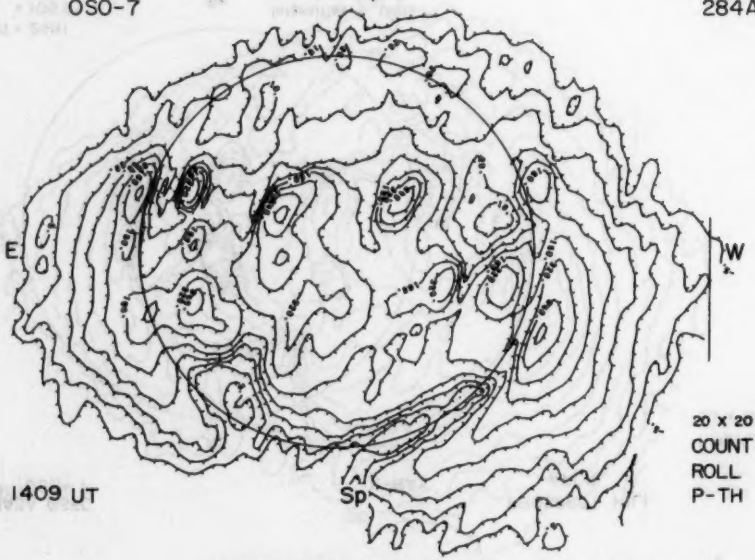
CORONA
WENDELSTEIN

NRL
OSO-7



0737 UT

NASA GSFC
OSO-7

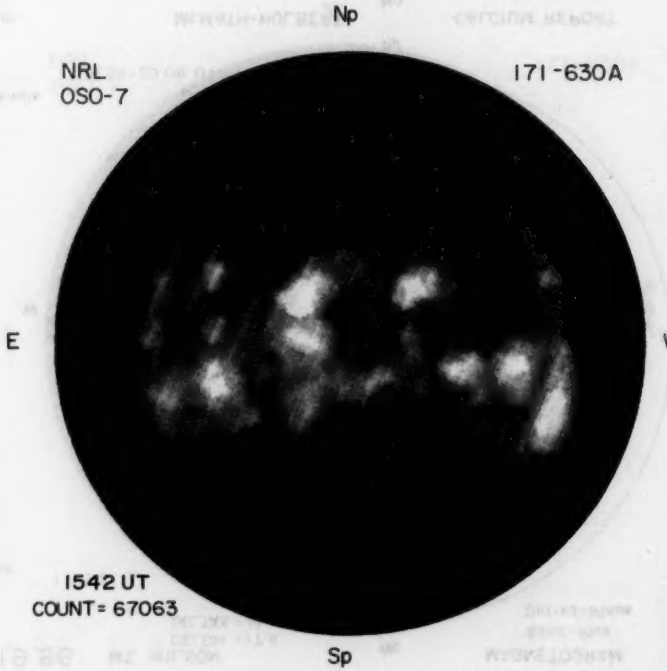


1409 UT

FE XV
284A

20 X 20 ARCSEC APERTURE
COUNT = 122866
ROLL = 106.3°
P-TH = 6.99

NRL
OSO-7



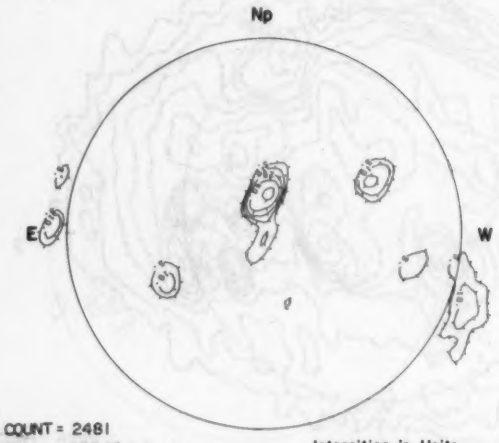
1542 UT
COUNT = 67063

65
Dec 72

DECEMBER 23, 1972 (P = 6.43 B_o = -1.98 L_o = 319.86

NASA GSFC
OSO-7

X-RAY



COUNT = 2481
ROLL = 105.9°
P-TH = 6.95.

2209 UT

Intensities in Units of 10^{-6} ergs cm^{-2} sec^{-1}

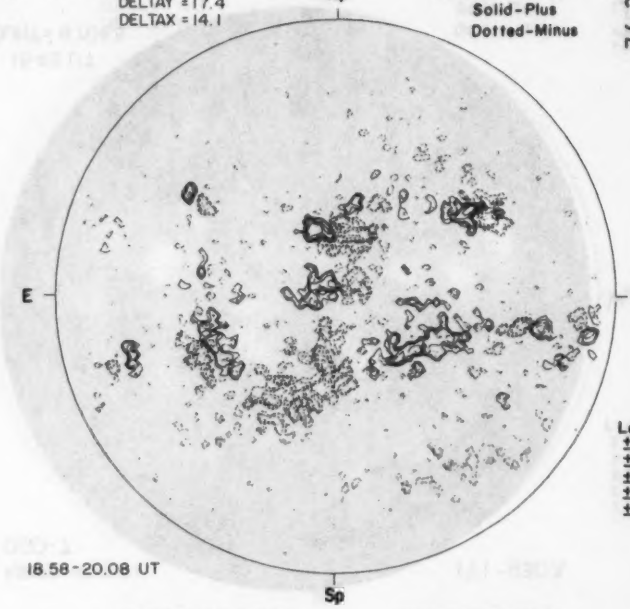
PROSPECT HILL
AFCRL

8.6 mm

Contours in Intervals of 200° K

MT. WILSON
DELTAY = 17.4
DELTAX = 14.1

MAGNETOGRAM
Solid-Plus
Dotted-Minus

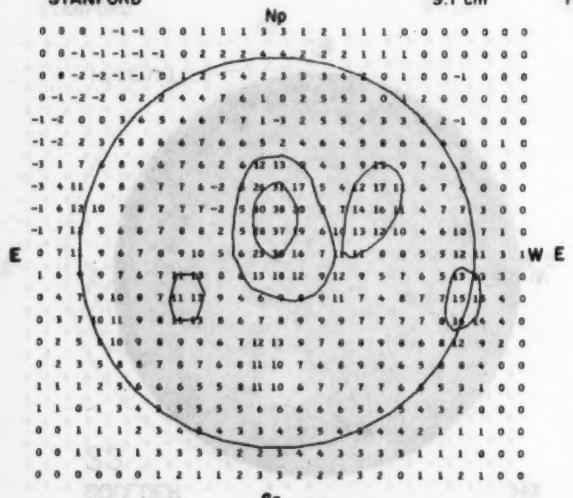


Levels
±5
±10
±20
±40
±80

18.58-20.08 UT

STANFORD

9.1 cm



20-21 UT

Brightness Unit 5,000° K

FLEURS, AUSTRALIA

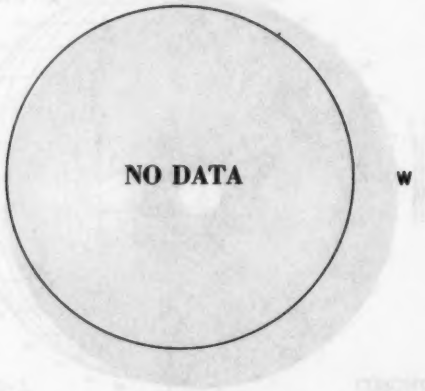
21 cm

02-03 UT

Resolution 3 Minutes of Arc
Brightness Unit 1,700° K

McMATH-HULBERT

CALCIUM REPORT



20-21 UT

02-03 UT Brightness Unit 1,700° K

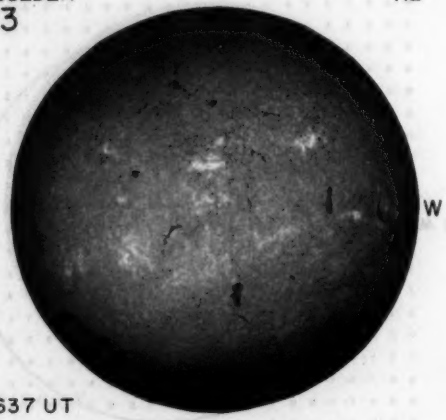
BOULDER
23

Np

Hα

E

W



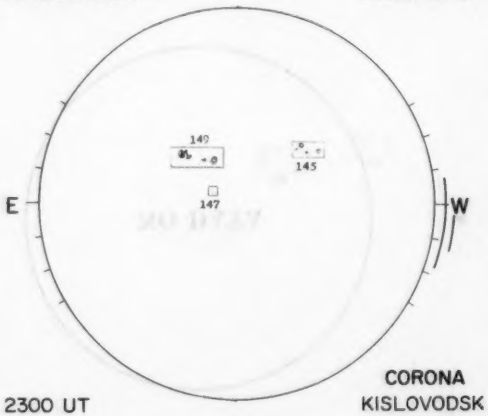
1637 UT

Sp

CARNARVON

Np

SUNSPOTS



E

W

2300 UT

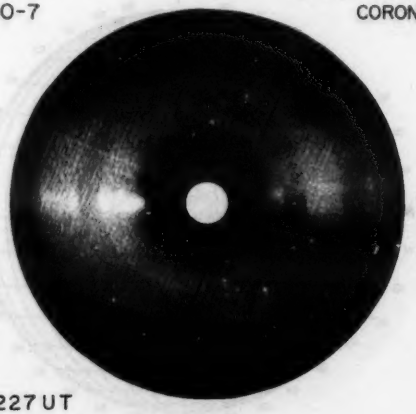
CORONA
KISLOVODSK

Sp

NRL
OSO-7

Np

WHITE - LIGHT
CORONA



E

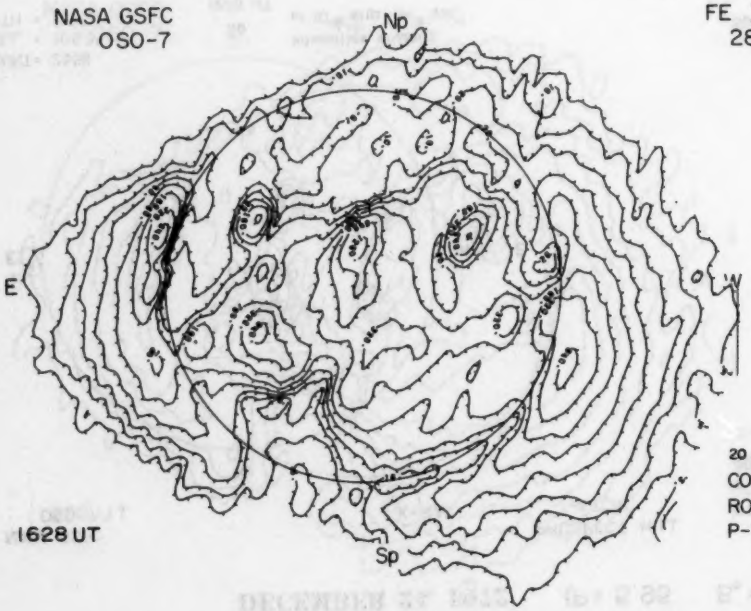
W

0227 UT

Sp

NASA GSFC
OSO-7

Np



E

W

1628 UT

Sp

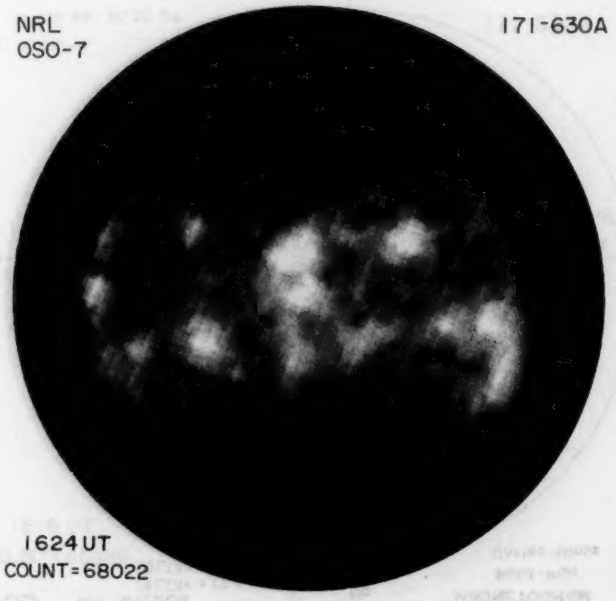
FE XV
284A

20 X 20 ARCSEC APERTURE
COUNT = 125143
ROLL = 105.9°
P-TH = 6.95

Np

NRL
OSO-7

171-630A



E

W

1624 UT
COUNT=68022

Sp

67
Dec 72

DECEMBER 24, 1972 (P= 5.95 B_o = -2.10 L_o = 306.69

NASA GSFC
OSO-7

X-RAY

COUNT = 2558
ROLL = 105.3°
P-TH = 6.92

1228 UT

Intensities in Units of 10^{-6} ergs cm^{-2} sec^{-1}

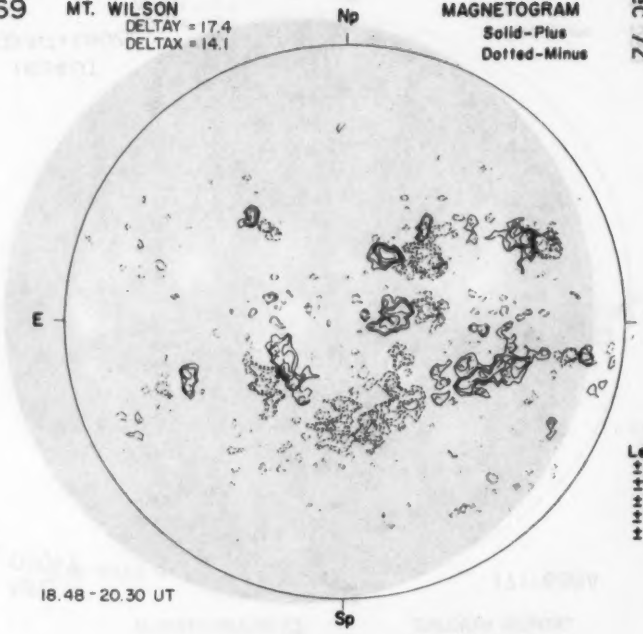
PROSPECT HILL
AFCRL

8.6 mm

Contours in Intervals of 200° K

MT. WILSON
DELTAY = 17.4
DELTAX = 14.1

MAGNETOGRAM
Solid-Plus
Dotted-Minus

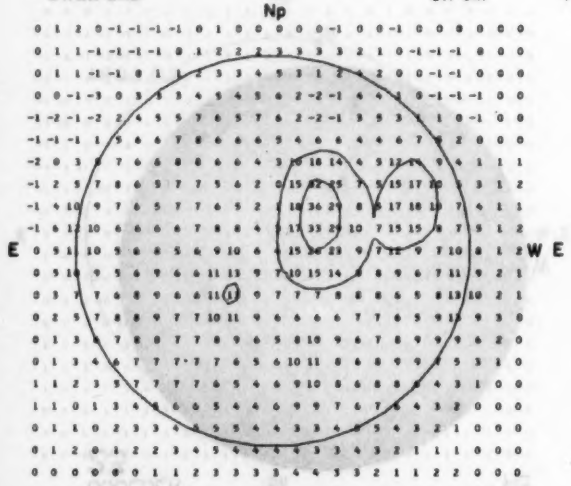


Levels
±5
±10
±20
±40
±80

18.48 - 20.30 UT

STANFORD

9.1 cm



20-21 UT

Brightness Unit 5,000° K

FLEURS, AUSTRALIA

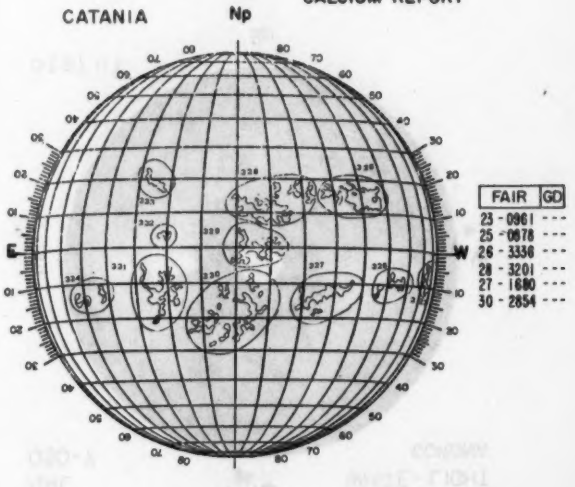
21 cm

02-03 UT

Resolution 3 Minutes of Arc
Brightness Unit 1,700° K

CALCIUM REPORT

CATANIA



	FAIR	GD
23 - 0961	---	
25 - 0878	---	
26 - 3336	---	
28 - 3201	---	
27 - 1680	---	
30 - 2854	---	

0815 UT

20-21 UT

Brightness Unit 5,000° K

02-03 UT

Resolution 3 Minutes of Arc

Brightness Unit 1,700° K

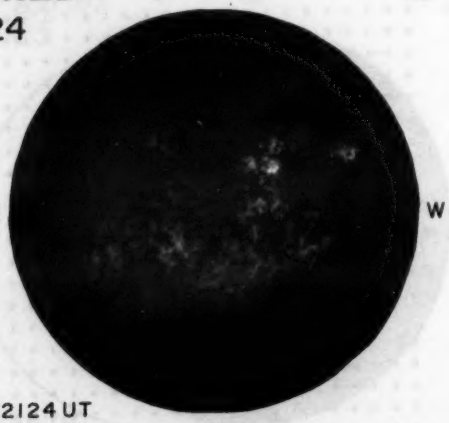
0815 UT

BOULDER

24

Np

Hα



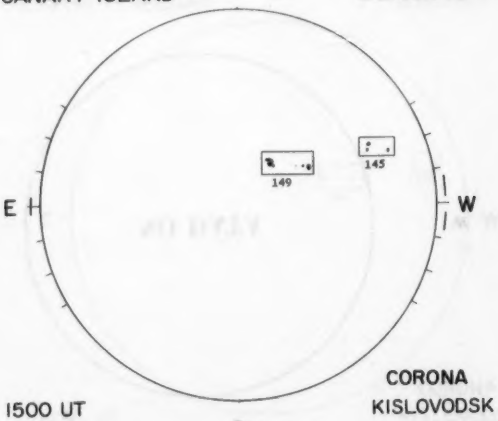
2124 UT

Sp

CANARY ISLAND

Np

SUNSPOTS



1500 UT

Sp

CORONA

KISLOVODSK

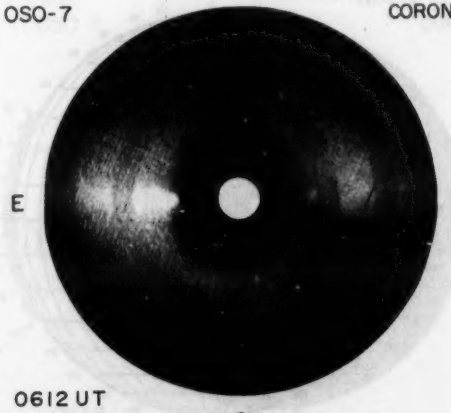
NRL

OSO-7

Np

WHITE-LIGHT

CORONA



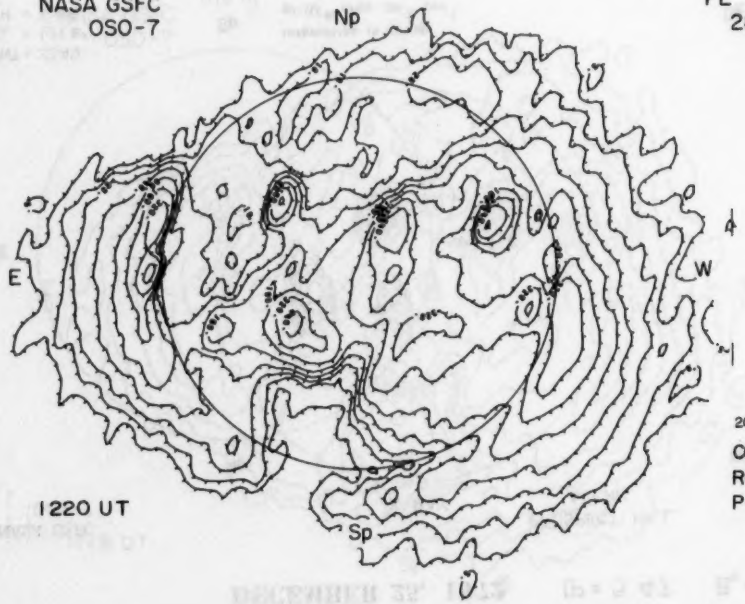
0612 UT

Sp

NASA GSFC

OSO-7

Np



1220 UT

FE XV

284A

20 X 20 ARCSEC APERTURE

COUNT = 115265

ROLL = 105.3°

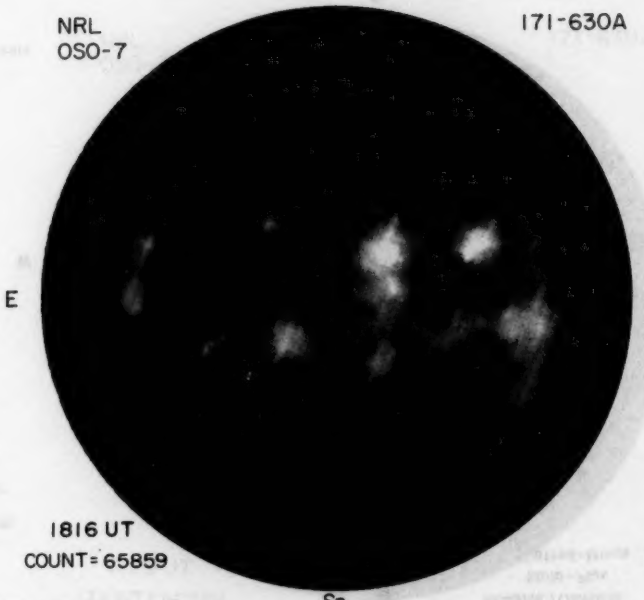
P-TH = 6.92

Np

NRL

OSO-7

171-630A



1816 UT

COUNT = 65859

69

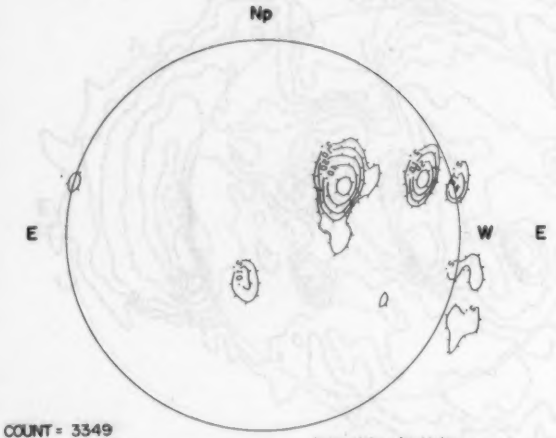
Dec 72

DECEMBER 25, 1972 (P = 5.47 B_o = -2.22 L_o = 293.52 MT. WILSON

Dec 72 70

NASA GSFC
OSO-7

X-RAY



COUNT = 3349
ROLL = 101.8°
P-TH = 6.84

1116 UT

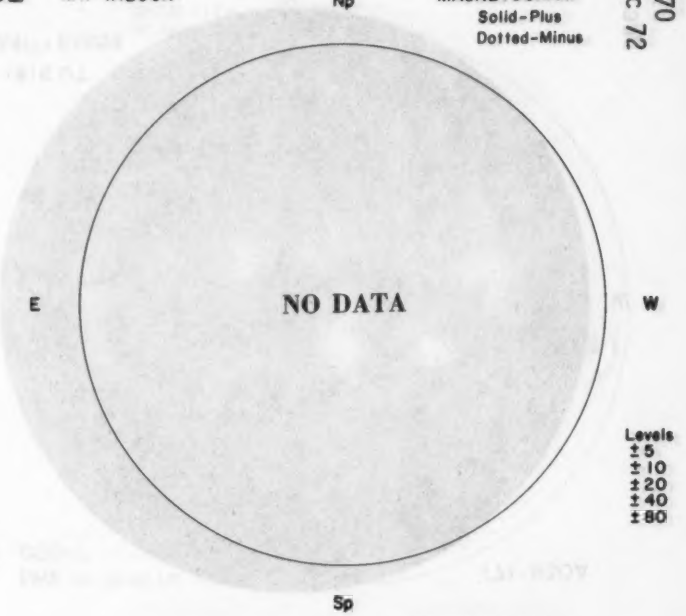
Intensities in Units of 10^{-6} ergs cm^{-2} sec^{-1}

PROSPECT HILL
AFCRL

8.6 mm

Contours in Intervals of 200° K

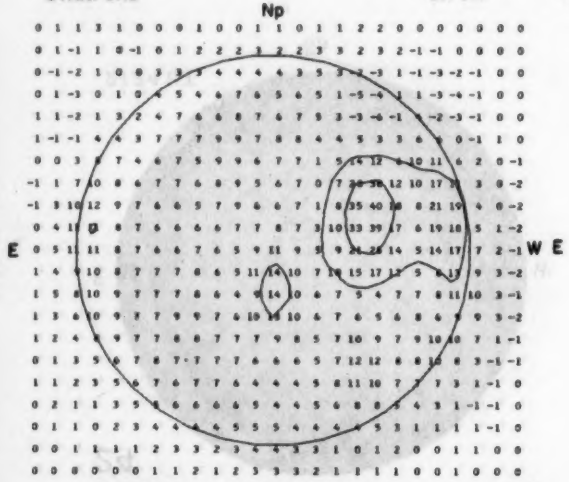
MAGNETOGRAM
Solid-Plus
Dotted-Minus



Levels
±5
±10
±20
±40
±80

STANFORD

9.1 cm



20-21 UT

Brightness Unit 5,000° K

FLEURS, AUSTRALIA

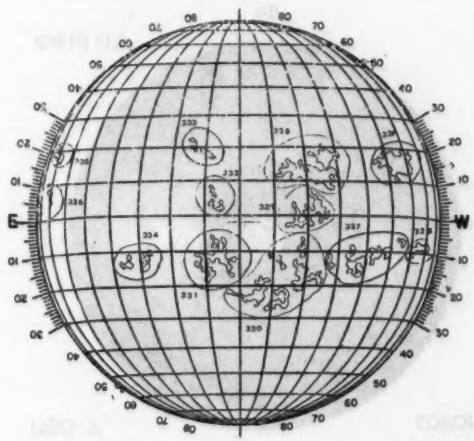
21 cm

02-03 UT

Resolution 3 Minutes of Arc
Brightness Unit 1,700° K

CALCIUM REPORT

CATANIA



0825 UT

	FAIR	GD
25	0869	---
26	3643	---
28	3341	---
27	1944	---
30	3335	---

20-21 UT

Brightness Unit 3,000° K

02-03 UT

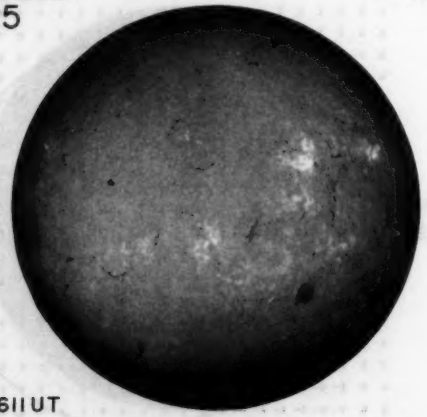
Resolution 5 Minutes of Arc
Brightness Unit 1,700° K

0825 UT

BOULDER
25

Np

Hα



E

W

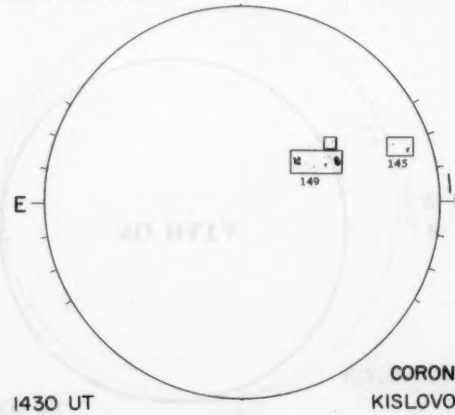
1611 UT

Sp

CANARY ISLAND

Np

SUNSPOTS



E

W

1430 UT

Sp

CORONA
KISLOVODSK

NRL
OSO-7

Np

WHITE-LIGHT
CORONA

E

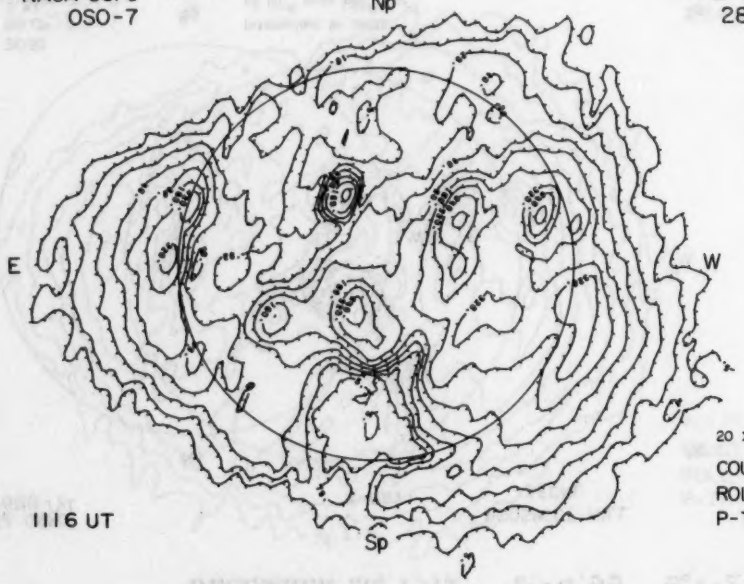
W

0518 UT

Sp

NASA GSFC
OSO-7

Np



E

W

1116 UT

Sp

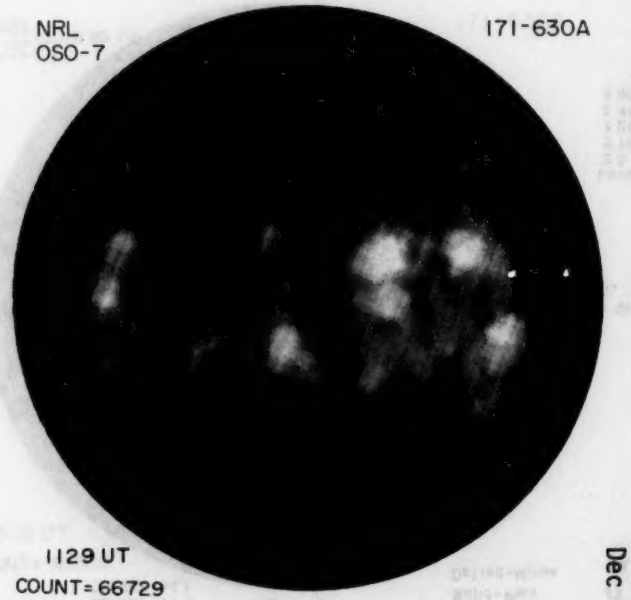
FE XV
284A

20 X 20 ARCSEC APERTURE
COUNT = 111044
ROLL = 104.7°
P-TH = 6.89

Np

NRL
OSO-7

171-630A



1129 UT
COUNT= 66729

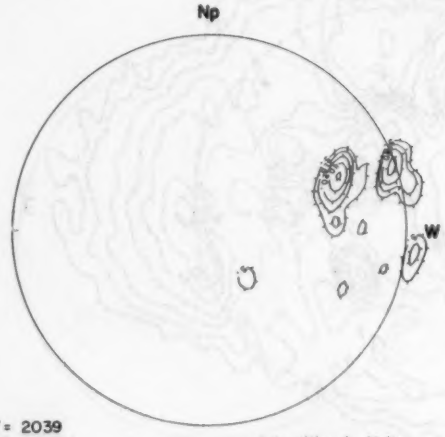
Sp

71
Dec 72

DECEMBER 26, 1972 (P = 4.99 B_o = -2.35 L_o = 280.34

NASA GSFC
OSO-7

X-RAY



COUNT = 2039
ROLL = 99.0°
P-TH = 6.81

1520 UT

Intensities in Units of 10^{-6} ergs cm^{-2} sec^{-1}

PROSPECT HILL
AFCRL

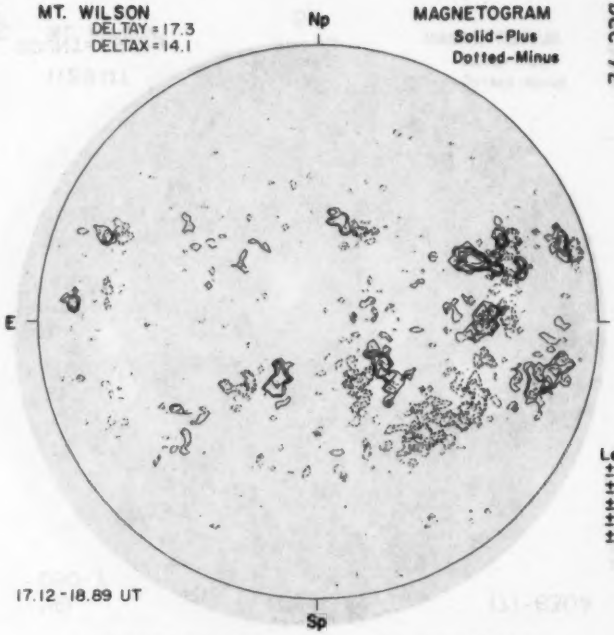
8.6 mm

Contours in Intervals of 200° K

MT. WILSON
DELTAY = 17.3
DELTAX = 14.1

MAGNETOGRAM
Solid-Plus
Dotted-Minus

72
Dec 72

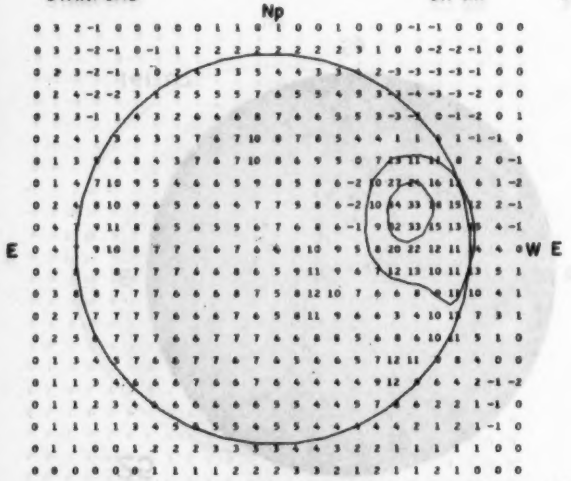


Levels
±5
±10
±20
±40
±80

17.12-18.89 UT

STANFORD

9.1 cm



20-21 UT

Brightness Unit 5,000° K

FLEURS, AUSTRALIA

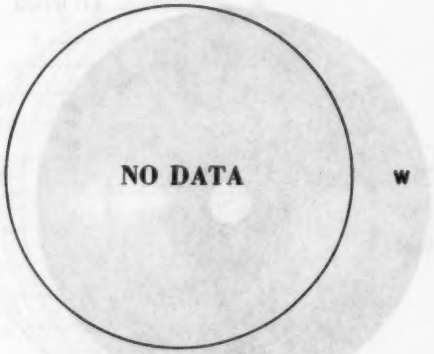
21 cm

02-03 UT

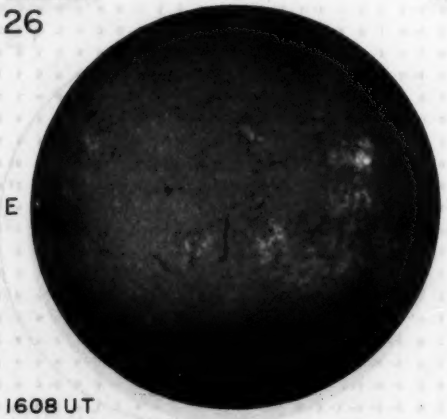
Resolution 3 Minutes of Arc
Brightness Unit 1,700° K

McMATH-HULBERT

CALCIUM REPORT

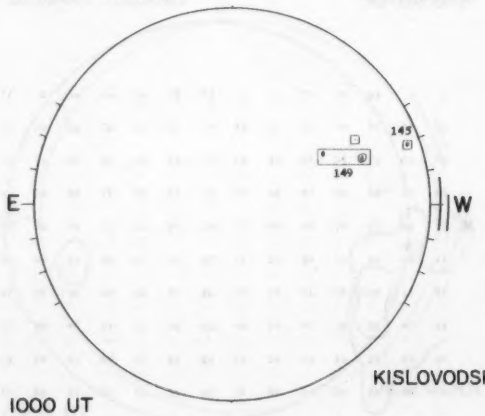


BOULDER
26



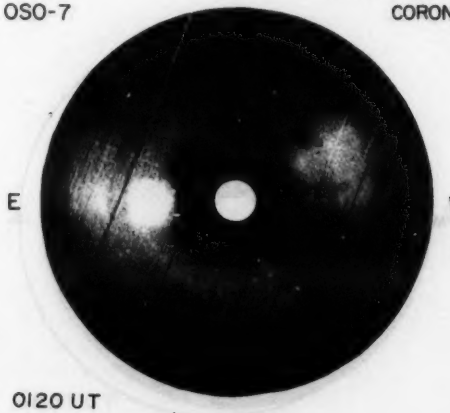
1608 UT

CANARY ISLAND
SUNSPOTS



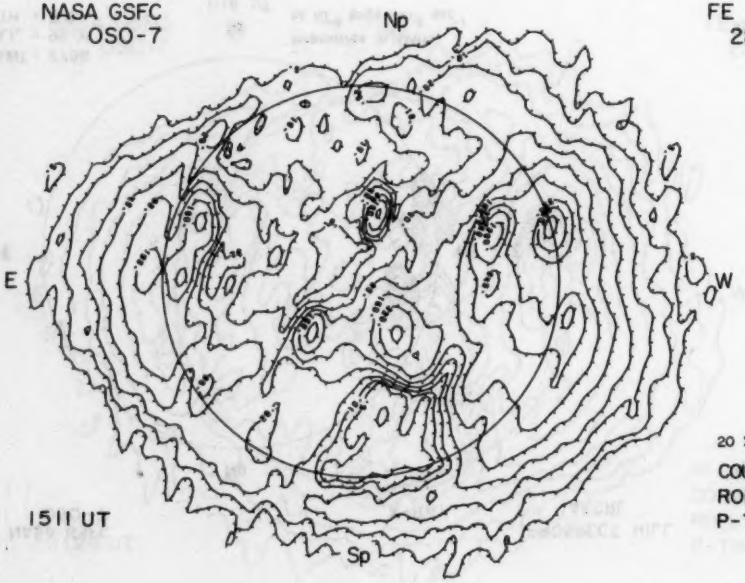
KISLOVODSK
1000 UT
Sp

NRL
OSO-7



0120 UT

NASA GSFC
OSO-7

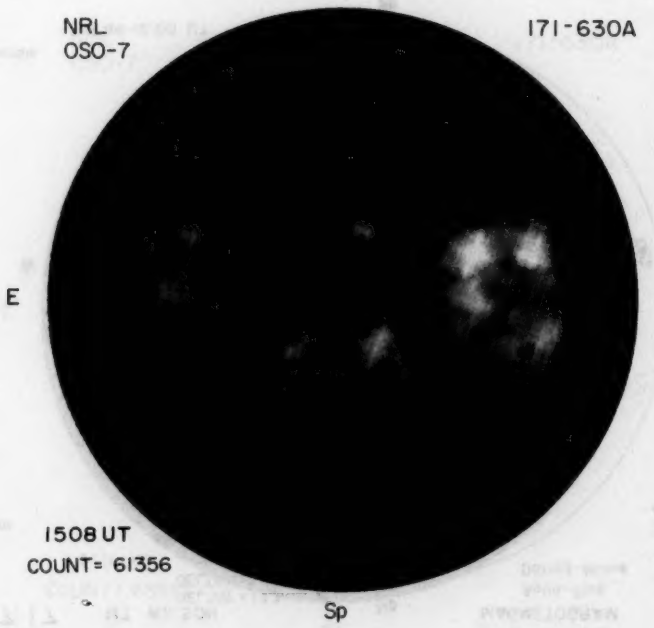


1511 UT

FE XV
284A

20 X 20 ARCSEC APERTURE
COUNT = 103160
ROLL = 101.8°
P-TH = 6.84

NRL
OSO-7



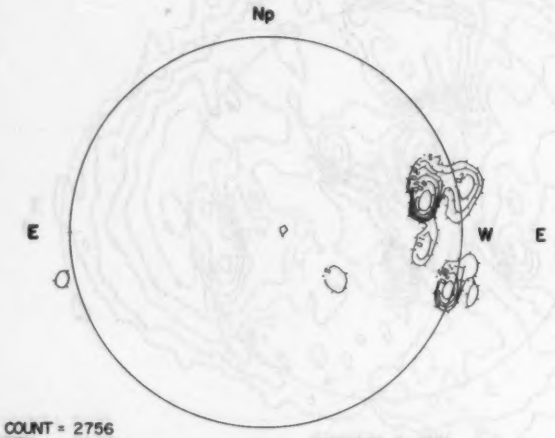
1508 UT
COUNT= 61356

73
Dec 72

DECEMBER 27, 1972 (P = 4.51 B_o = -2.47 L_o = 267.17

NASA GSFC
OSO-7

X-RAY



COUNT = 2756
ROLL = 99.0°
P-TH = 6.81

1118 UT

Intensities in Units of 10^{-6} ergs cm^{-2} sec^{-1}

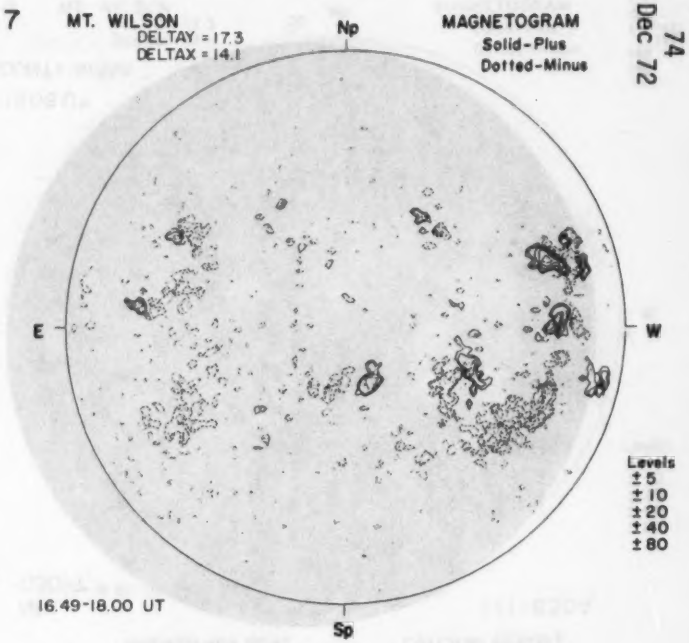
PROSPECT HILL
AFCRL

8.6 mm

Contours in Intervals of 200° K

MT. WILSON
DELTAY = 17.3
DELTAX = 14.1

MAGNETOGRAM
Solid-Plus
Dotted-Minus

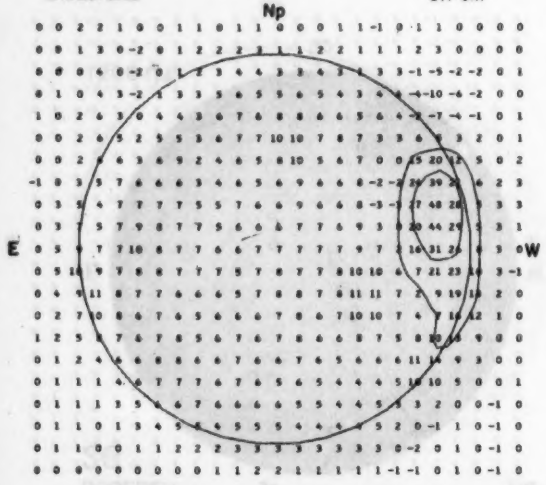


Levels
±5
±10
±20
±40
±80

16.49-18.00 UT

STANFORD

9.1 cm

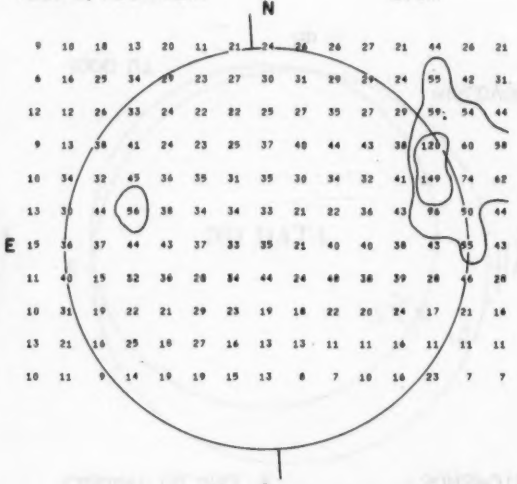


Brightness Unit 5,000° K

20-21 UT

FLEURS, AUSTRALIA

21 cm

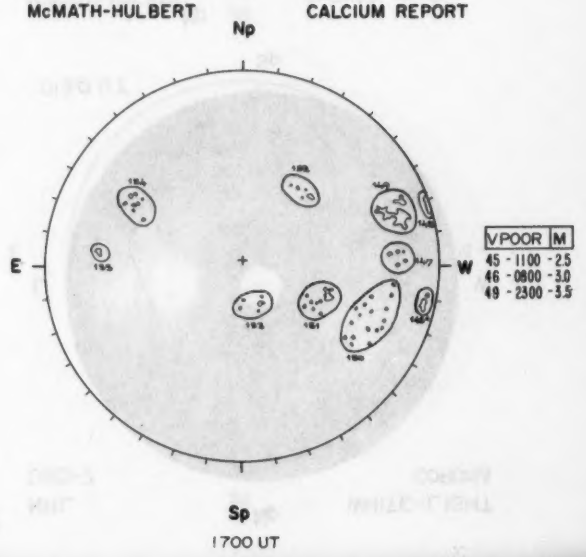


Resolution 3 Minutes of Arc
Brightness Unit 1,700° K

02-03 UT

McMATH-HULBERT

CALCIUM REPORT

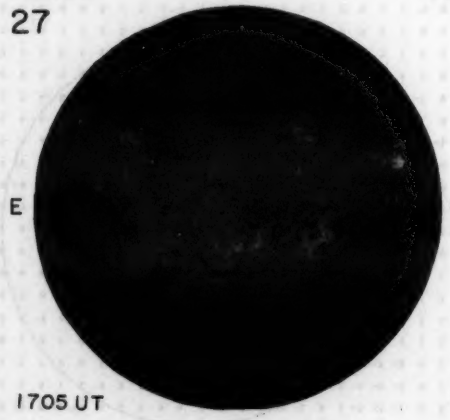


1700 UT

NRL

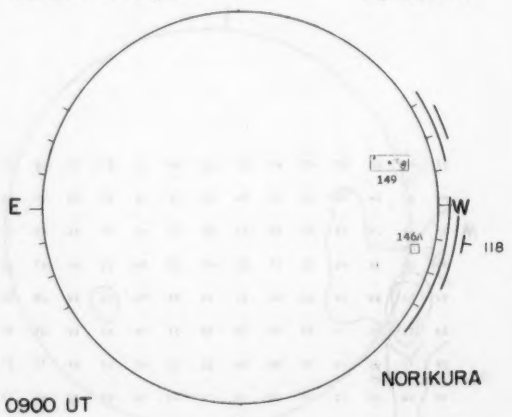
WHITE-LIGHT

BOULDER
27



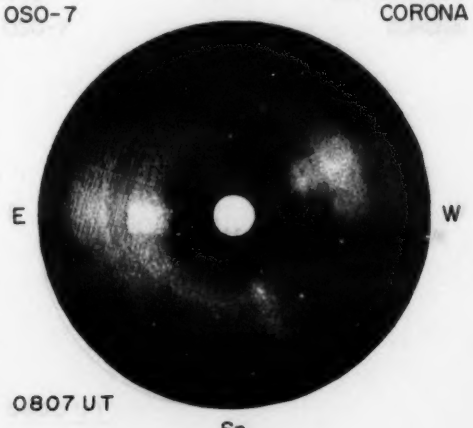
1705 UT

CANARY ISLAND



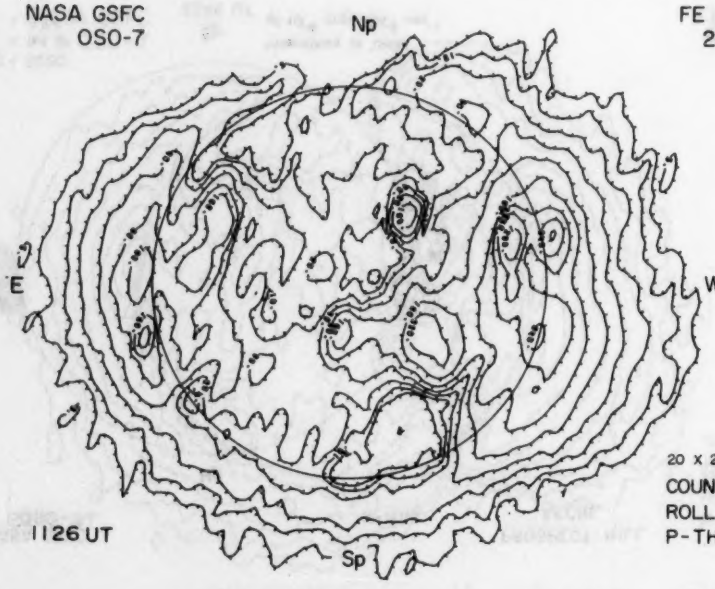
0900 UT

NRL
OSO-7



0807 UT

NASA GSFC
OSO-7



1126 UT

FE XV
284A

20 X 20 ARCSEC APERTURE
COUNT = 95523
ROLL = 99.0°
P-TH = 6.81

NRL
OSO-7

1419 UT
COUNT = 63510

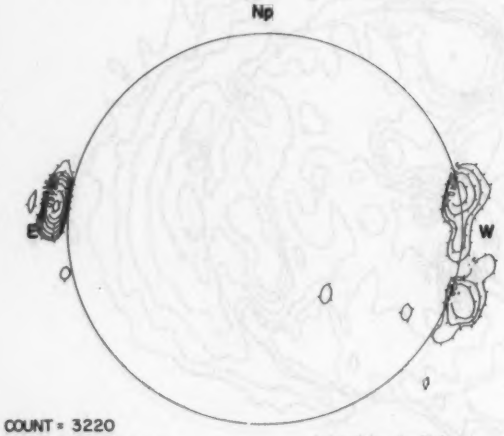
75
Dec 72

DECEMBER 28, 1972 (P=4.03 B_o=-2.59 L_o=254.00 MT. WILSON

76 Dec 72

NASA GSFC
OSO-7

X-RAY



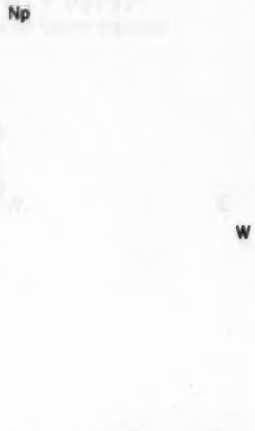
COUNT = 3220
ROLL = 94.9°
P-TH = 6.74

2245 UT

Intensities in Units of 10^{-6} ergs cm^{-2} sec^{-1}

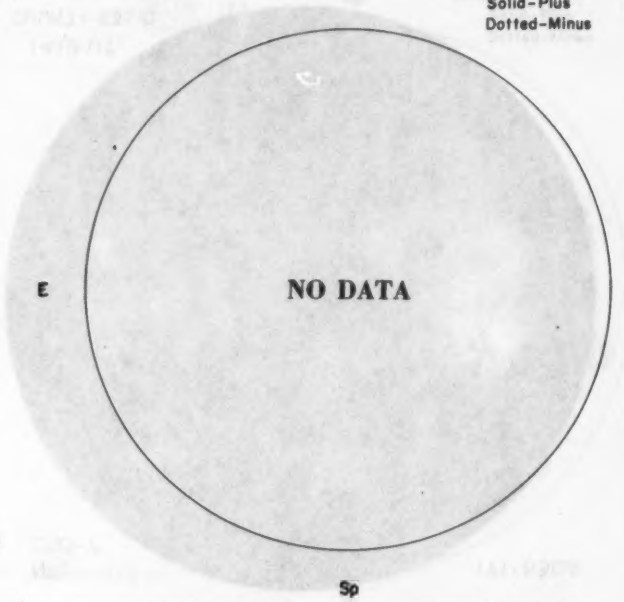
PROSPECT HILL
AFCRL

8.6 mm



Contours in Intervals of 200° K

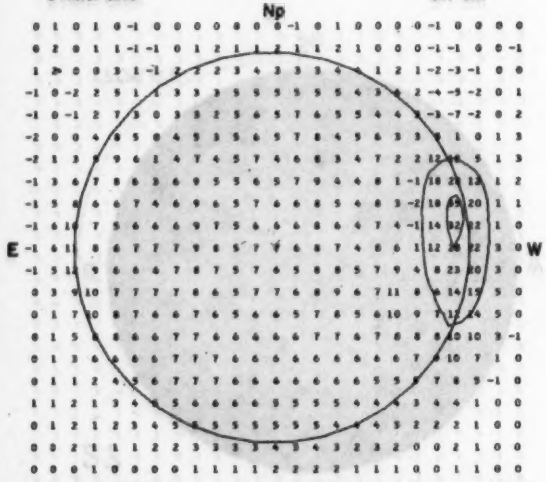
MAGNETOGRAM
Solid-Plus
Dotted-Minus



Levels
±5
±10
±20
±40
±80

STANFORD

9.1 cm

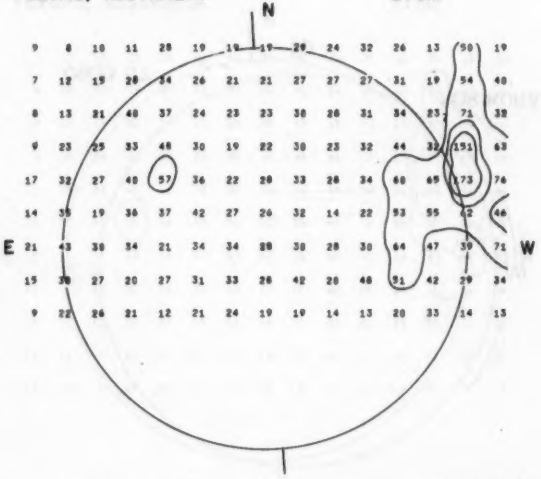


20-21 UT

Brightness Unit 5,000° K

FLEURS, AUSTRALIA

21 cm

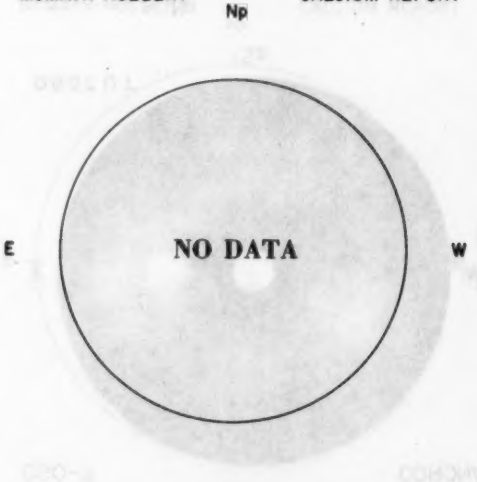


02-03 UT

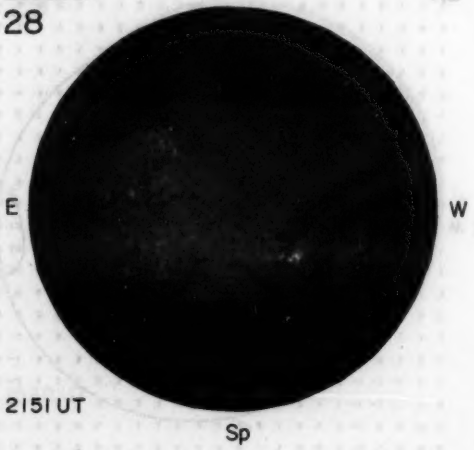
Resolution 3 Minutes of Arc
Brightness Unit 1,700° K

McMATH-HULBERT

CALCIUM REPORT

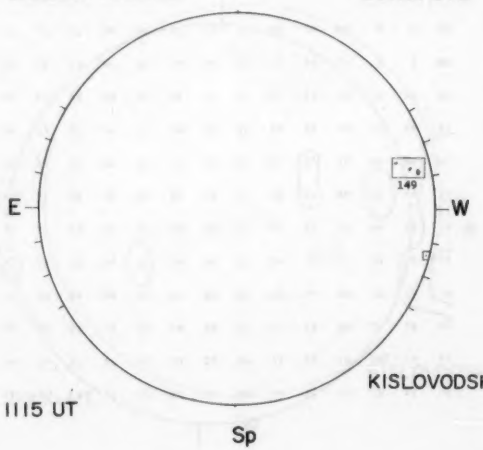


BOULDER
28



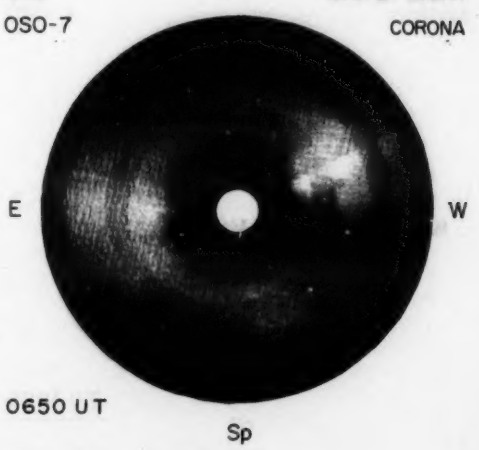
2151 UT

CANARY ISLAND
SUNSPOTS



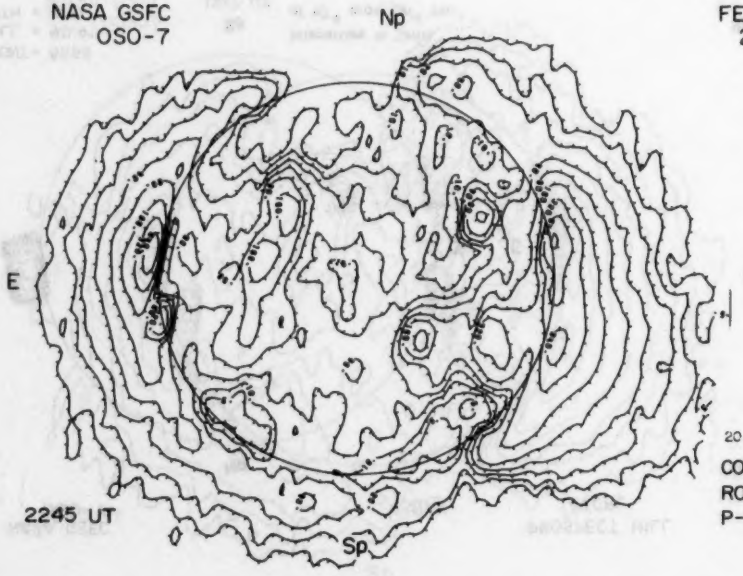
KISLOVODSK
1115 UT

NRL
OSO-7
WHITE-LIGHT
CORONA



0650 UT

NASA GSFC
OSO-7

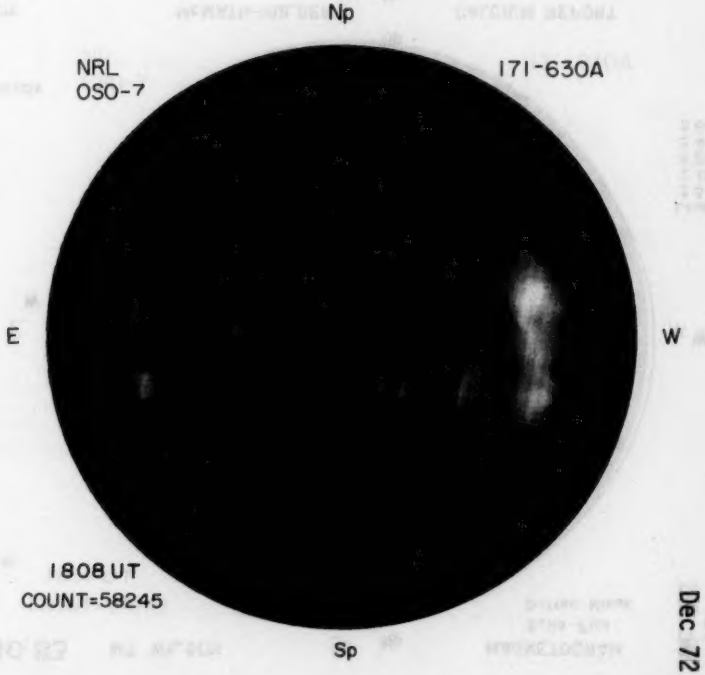


2245 UT

FE XV
284A

20 X 20 ARCSEC APERTURE
COUNT = 88189
ROLL = 94.9°
P-TH = 6.74

NRL
OSO-7
171-630A



1808 UT
COUNT=58245

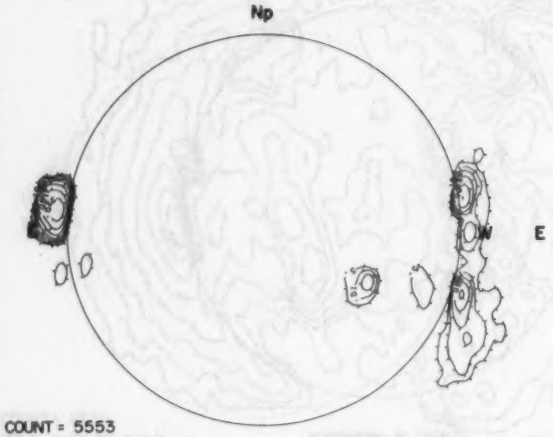
77
Dec 72

DECEMBER 29, 1972 (P = 3.54 B_o = -2.71 L_o = 240.83 MT. WILSON

78
Dec 72

NASA GSFC
OSO-7

X-RAY



COUNT = 5553
ROLL = 90.4°
P-TH = 6.71

1527 UT

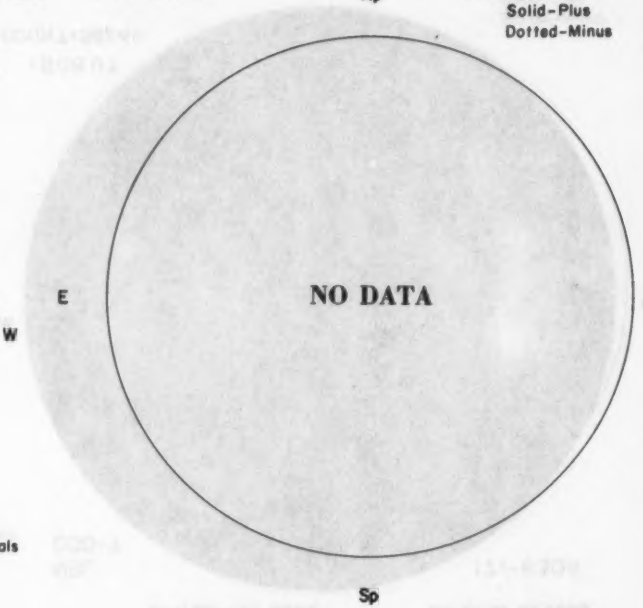
Intensities in Units of 10^{-6} ergs cm^{-2} sec^{-1}

PROSPECT HILL
AFCRL

8.6 mm

Contours in Intervals of 200° K

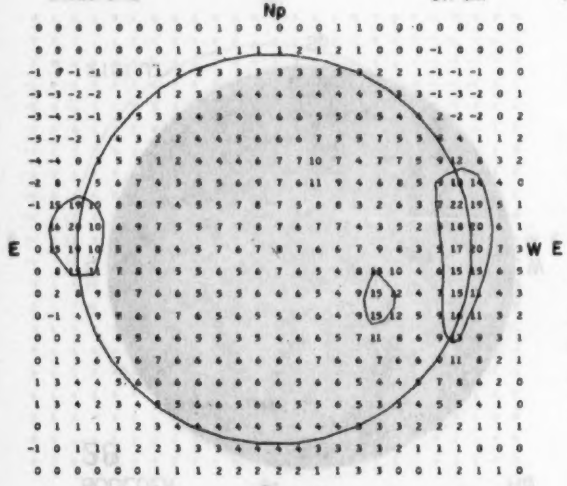
MAGNETOGRAM
Solid-Plus
Dotted-Minus



Levels
±5
±10
±20
±40
±80

STANFORD

9.1 cm

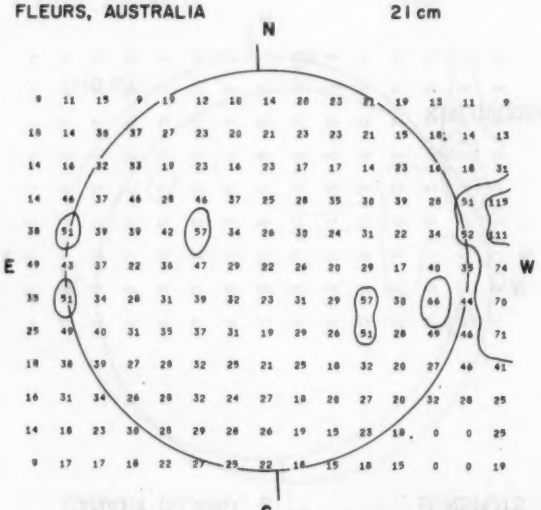


20-21 UT

Brightness Unit 5,000° K

FLEURS, AUSTRALIA

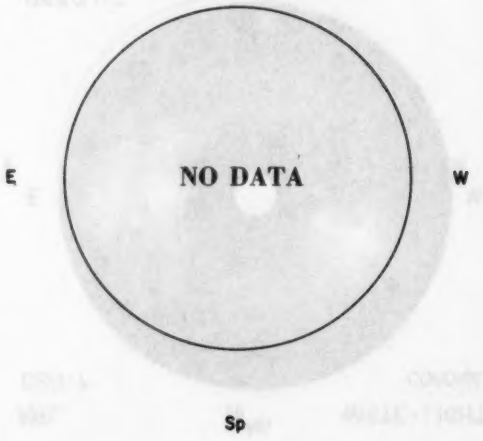
21 cm



02-03 UT

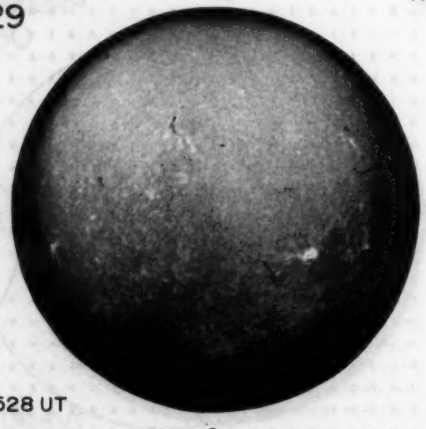
Resolution 3 Minutes of Arc
Brightness Unit 1,700° K

McMATH-HULBERT



CALCIUM REPORT

RAMEY AFB
29

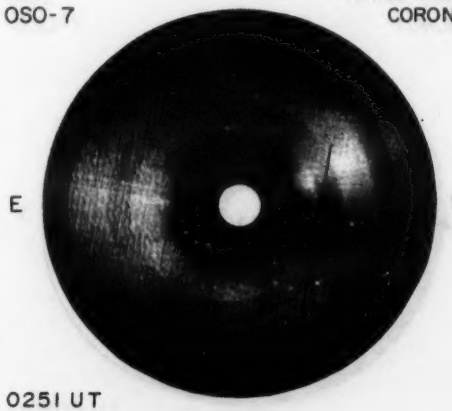


1528 UT

CANARY ISLAND

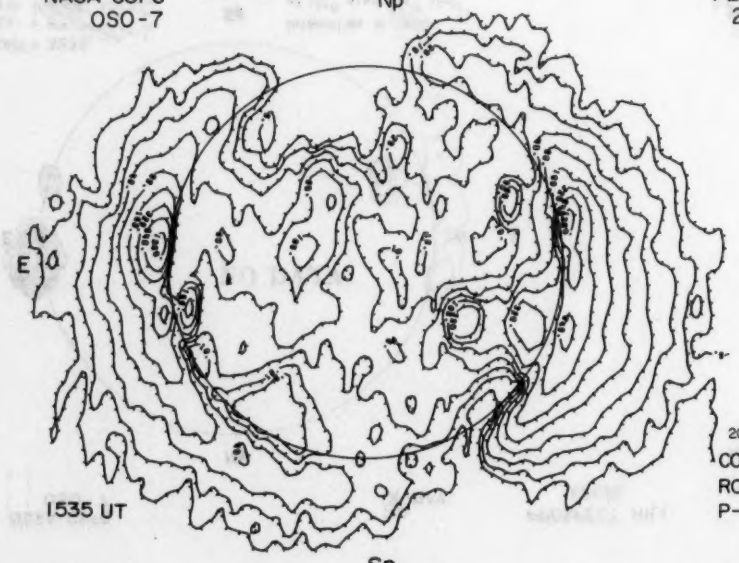
0930 UT

NRL
OSO-7



0251 UT

NASA GSFC
OSO-7



1535 UT

FE XV
284A

20 X 20 ARCSEC APERTURE
COUNT = 84377
ROLL = 90.4°
P-TH = 6.71

NRL
OSO-7

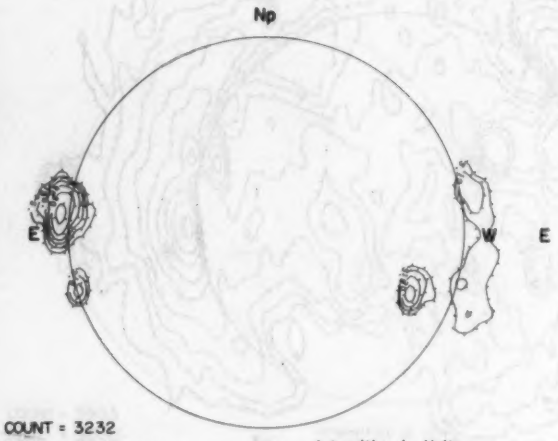
1857 UT
COUNT = 56722

79
Dec 72

DECEMBER 30, 1972 (P= 3.06 B_o = -2.83 L_o = 227.66

NASA GSFC
OSO-7

X-RAY



COUNT = 3232
ROLL = 87.0°
P-TH = 6.65

2204 UT

Intensities in Units of 10^{-6} ergs cm^{-2} sec^{-1}

PROSPECT HILL
AFCRL

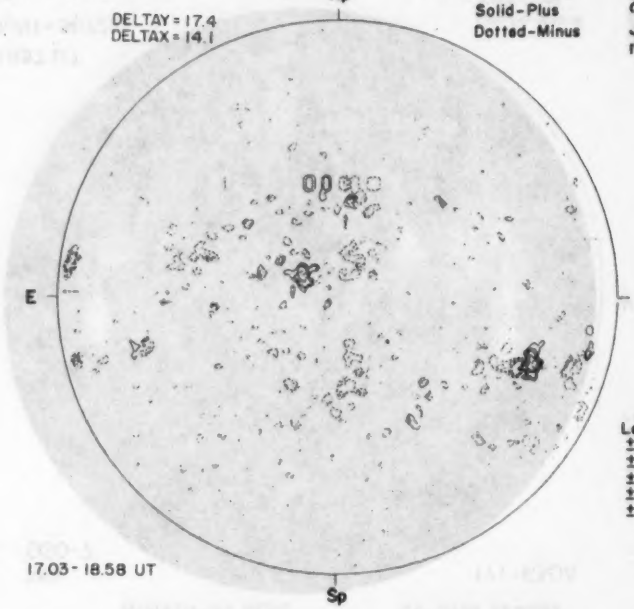
8.6 mm

Contours in Intervals of 200° K

MT. WILSON

MAGNETOGRAM
Solid-Plus
Dotted-Minus

DELTAY = 17.4
DELTAX = 14.1



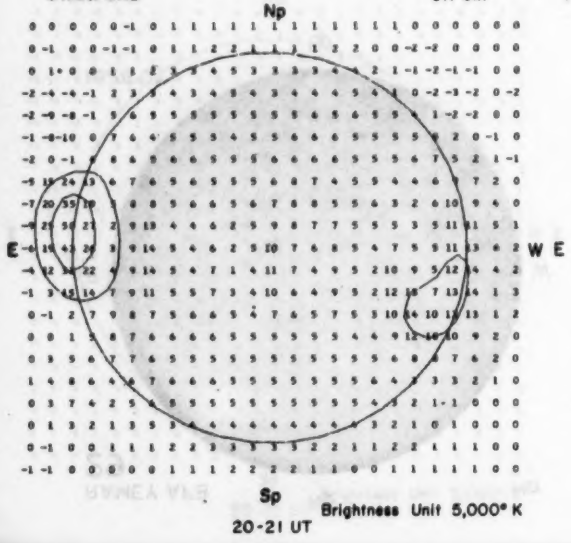
Levels
±5
±10
±20
±40
±80

17.03-18.58 UT

Dec 72 80

STANFORD

9.1 cm



20-21 UT

Brightness Unit 5,000° K

FLEURS, AUSTRALIA

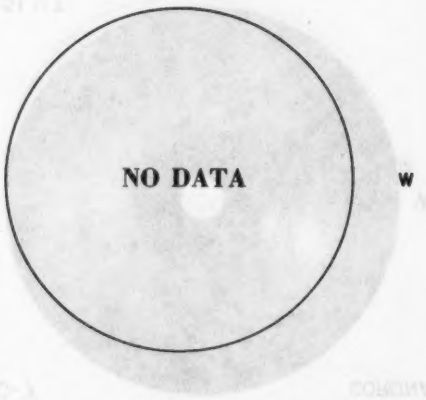
21 cm

02-03 UT

Resolution 3 Minutes of Arc
Brightness Unit 1,700° K

McMATH-HULBERT

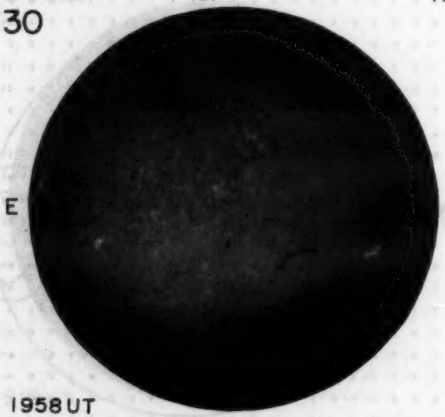
CALCULUM REPORT



BOULDER
30

Np

Hα



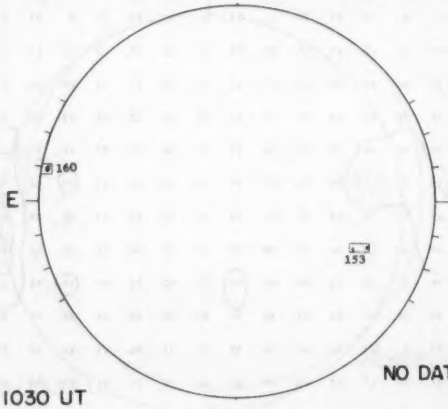
1958 UT

Sp

CANARY ISLAND

Np

SUNSPOTS



1030 UT

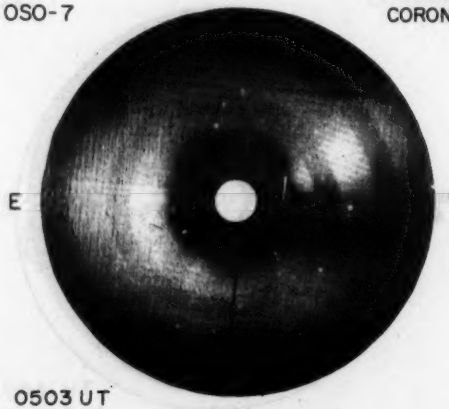
NO DATA

Sp

NRL
OSO-7

Np

WHITE-LIGHT
CORONA



0503 UT

Sp

NASA GSFC
OSO-7

Np

E

NO DATA

W

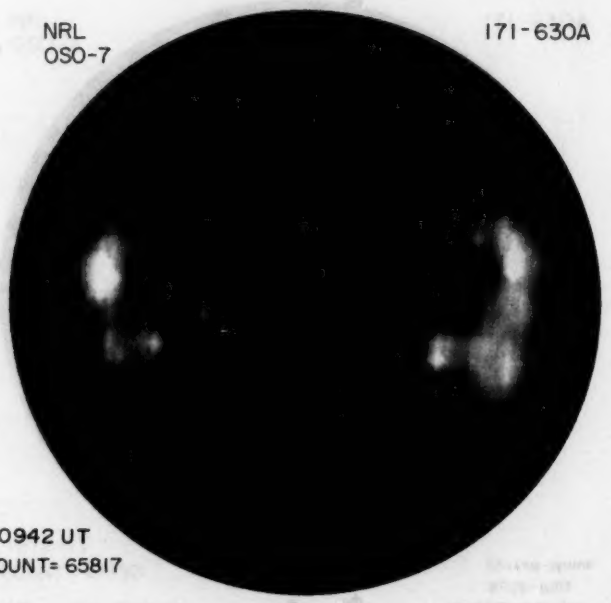
Sp

FE XV
284A

Np

NRL
OSO-7

171-630A



0942 UT
COUNT= 65817

Sp

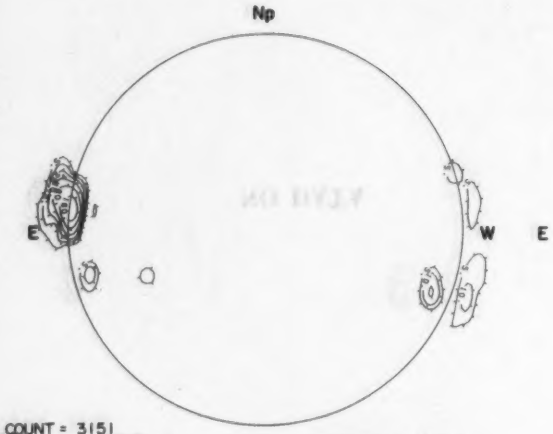
81
Dec 72

DECEMBER 31, 1972 (P= 2.57 B_o = -2.95 L_o = 214.49 MT. WILSON

82
Dec 72

NASA GSFC
OSO-7

X-RAY



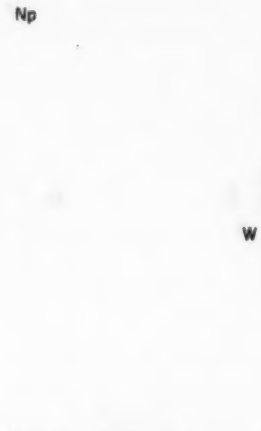
COUNT = 3151
ROLL = 86.7°
P-TH = 6.62

1200 UT

Intensities in Units of 10^{-6} ergs cm^{-2} sec^{-1}

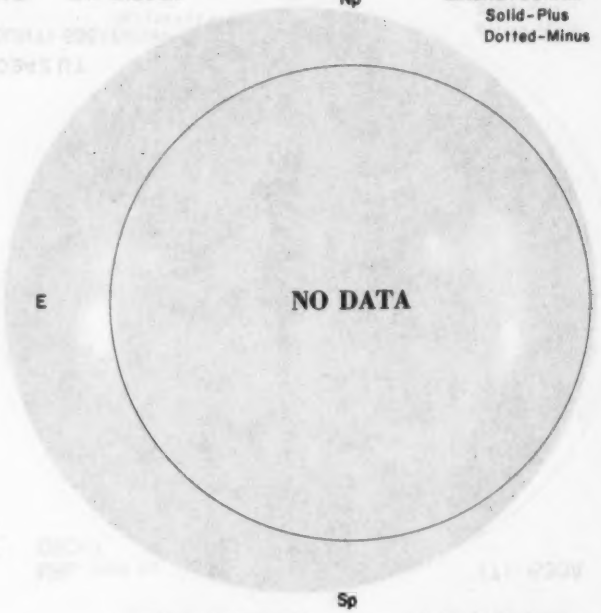
PROSPECT HILL
AFCRL

8.6 mm



Contours in Intervals of 200° K

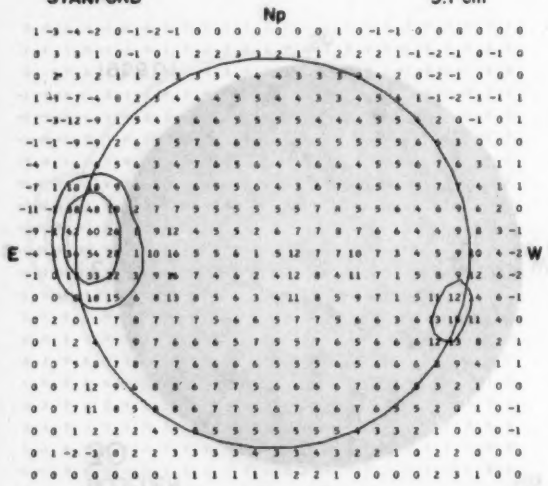
MAGNETOGRAM
Solid-Plus
Dotted-Minus



Levels
±5
±10
±20
±40
±80

STANFORD

9.1 cm

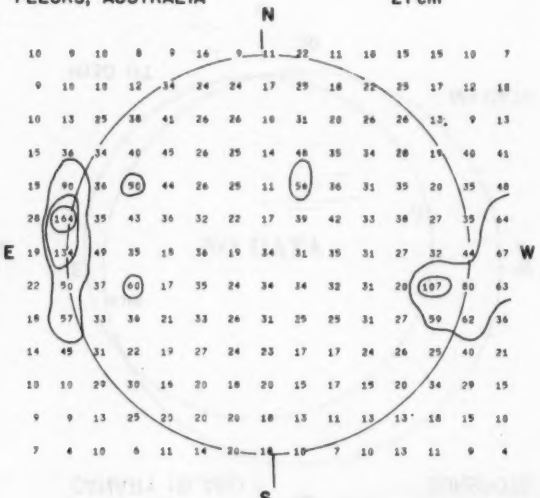


20-21 UT

Brightness Unit 5,000° K

FLEURS, AUSTRALIA

21 cm

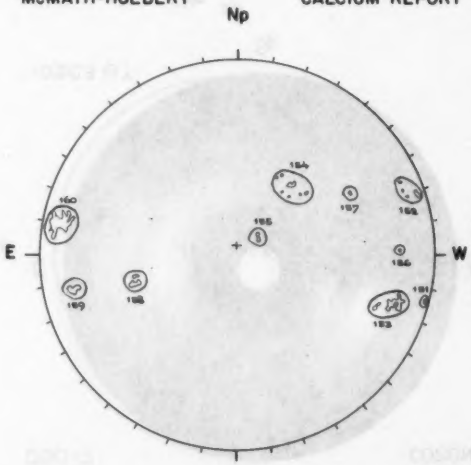


02-03 UT

Resolution 3 Minutes of Arc
Brightness Unit 1,700° K

McMATH-HULBERT

CALCIUM REPORT



FAIR	M
53-1100	-2.5
58-0300	-2.5
59-0800	-2.5
60-3000	-3.5

1530 UT

20-21 UT

02-03 UT Brightness Unit 1,700° K

1530 UT

BOULDER

31

Np

Hα

E

W

Sp

1919 UT

CARNARVON

Np

SUNSPOTS

160

159

153

E

W

WENDELSTEIN

30/2330 UT

Sp

NRL
OSO-7

Np

WHITE-LIGHT
CORONA

E

W

0541 UT

Sp

NASA GSFC
OSO-7

Np

E

W

1208 UT

FE XV
284A

20 X 20 ARCSEC APERTURE
COUNT = 74709
ROLL = 86.7°
P-TH = 6.62

NRL
OSO-7

Np

171-630A

E

W

1212 UT
COUNT = 61993

Sp

83
Dec 72

REGIONS OF SOLAR ACTIVITY

DECEMBER 1972

MCMATH REGION 12130 CMP DATE 2.8

				CALCIUM PLAGE DATA				SUNSPOT DATA							9.1 CM	
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	AREA	CNT	C	INT FLUX
72	11	29	12130	S20 E45	223	300	1.0									
72	11	30	12130	S20 E28	226	200	1.0									

MCMATH REGION 12127 CMP DATE 2.8

				CALCIUM PLAGE DATA				SUNSPOT DATA							9.1 CM	
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	AREA	CNT	C	INT FLUX
72	11	28	12127	N17 E59	220	400	2.0									
72	11	29	12127	N17 E48	220	400	1.5									
72	11	30	12127	N17 E35	219	300	2.0	19055	N18 E34	216	(BF)	2				
72	12	1	12127	N17 E23	219	400	2.0									
72	12	3	12127	N18 W11	225	300	1.5									
72	12	6	12127	N18 W48	223	200	1.0									

MCMATH REGION 12128 CMP DATE 3.9

				CALCIUM PLAGE DATA				SUNSPOT DATA							9.1 CM	
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	AREA	CNT	C	INT FLUX
72	11	28	12128	N03 E70	209	800	2.0									
72	11	29	12128	N04 E58	210	1000	2.0									3 2
72	11	30	12128	N04 E43	211	800	2.0									
72	12	1	12128	N04 E29	213	1000	2.0									
72	12	2														2 1
72	12	3	12128	N04 E03	211	700	2.0									
72	12	6	12128	N04 W36	211	800	2.0									
72	12	7	12128	N04 W50	211	900	2.0									

MCMATH REGION 12132 CMP DATE 4.0

				CALCIUM PLAGE DATA				SUNSPOT DATA								9.1 CM	
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	AREA	CNT	C	INT	FLUX
72	12	2						19056	S15 E14	209	(B)	2					
72	12	3	12132	S14 E05	209	500	2.5	19056	S16 E04	210	(B)	1	10	10	BXO	2	1
72	12	4							S16 W06				-0	5	BXX		
72	12								S16 W06				-0	5	BXX		
72	12	5						19056	S16 W28	212	(BP)	3				4	2
72	12	6	12132	S15 W36	211	700	3.0	19056	S15 W42	216	(AP)	2	40	5	CAO	2	1
72	12	7	12132	S15 W49	210	900	2.5		S15 W51				20	1	HSX	3	2
72	12								S15 W51				20	1	HSX		
72	12	8														3	2

MCMATH REGION 12135 CMP DATE 6.2

				CALCIUM PLAGE DATA				SUNSPOT DATA							9.1 CM	
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	AREA	CNT	C	INT FLUX
72	12	6	12135	N06 W06	181	300	1.5									
72	12	7	12135	N06 W19	180	400	1.0									

MCMATH REGION 12134 CMP DATE 7.0

				CALCIUM PLAGE DATA				SUNSPOT DATA							9.1 CM	
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	AREA	CNT	C	INT FLUX
72	12	3	12134	N16 E45	169	200	1.0									

MCMATH REGION 12133 CMP DATE 8.1

				CALCIUM PLAGE DATA				SUNSPOT DATA							9.1 CM	
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	AREA	CNT	C	INT FLUX
72	12	3	12133	N11 E59	155	200	1.0									
72	12	5														4 2

REGIONS OF SOLAR ACTIVITY

DECEMBER 1972

MCMATH REGION 12136 CMP DATE 11.9

CALCIUM PLAGE DATA

YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT
72	12	6	12136	N13 E71	104	1800	3.5
72	12	7	12136	N13 E59	102	3100	3.5
72	12						
72	12	8					
72	12	9					
72	12						
72	12	10					
72	12	11	12136	N12 E04	106	3200	3.5
72	12						
72	12	12					
72	12						
72	12	13					
72	12						
72	12	14					
72	12						
72	12	15					
72	12						
72	12	16					
72	12						
72	12	17	12136	N12 W75	105	2900	3.0

SUNSPOT DATA 9.1 CM

MW NO.	LAT CMD	L	MAG.	H	AREA	CNT	C	INT	FLUX
19057	N11 E68	106	(BF)	2	50	6	CAO	7	4
	N12 E63				160	18	DAI	17	10
	N12 E63				160	18	DAI		
	N11 E41				540	31	EAI	4	3
19058	N11 E25	107	(B)	4					
19057	N11 E30	102	(BP)	5	750	22	EKC		
	N12 E16				490	37	EKI	9	5
19058	N11 W04	111	(BP)	4				24	14
19057	N10 E04	103	(BP)	5	380	36	FAI		
19058	N11 W17	110	(B)	3	320	24	FAI	18	10
19057	N10 W10	103	(BP)	5					
19058	N12 W34	112	(BP)	4				13	8
19057	N11 W25	103	(BP)	5	160	8	DAO		
19058	N12 W44	113	(BP)	5	100	5	ESO	12	7
19057	N11 W34	103	(BP)	4	80	7	CAO		
19058	N12 W58	112	(BP)	4				10	6
19057	N10 W51	105	(AP)	4	180	6	EAO		
19058	N13 W69	112	(B)	3	120	4	EAO	7	4
19057	N11 W64	107	(AP)	4					
19057	N12 W80	106	AP	0	10	1	HSX	6	3

MCMATH REGION 12137 CMP DATE 12.5

CALCIUM PLAGE DATA

YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT
72	12	9					
72	12						
72	12	10					
72	12						
72	12	11	12137	S14 E12	98	900	2.5
72	12						
72	12	12					
72	12	13					
72	12	14					
72	12	15					
72	12	16					
72	12	17	12137	S15 W67	97	1100	2.5
72	12	18	12137	S16 W80	94	900	1.0

SUNSPOT DATA 9.1 CM

MW NO.	LAT CMD	L	MAG.	H	AREA	CNT	C	INT	FLUX
19059	S17 E32	100	(AP)	1					
19060	S11 E33	99	(BP)	2					
	S08 E23				10	5	BXO		
	S14 E21				-0	1	AXX		
19059	S19 E09	98	(B)	2	10	5	CRO		
	S10 E14				-0	1	AXX		
19059	S19 W05	98	(BP)	2	-0	6	BXO		
19059	S18 W19	97	(BP)	3	60	8	CAI		
19059	S17 W28	97	(BP)	3	20	4	CAO		
19059	S17 W43	97	(B)	2	20	7	CAO		
19059	S18 W55	98	(BP)	2	10	1	HRX		
								4	3

MCMATH REGION 12141 CMP DATE 15.6

CALCIUM PLAGE DATA

YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT
72	12	11	12141	N23 E57	53	500	3.5
72	12	12					
72	12	13					
72	12	14					
72	12	15					
72	12	16					
72	12	17	12141	N23 W26	56	700	2.5
72	12	18	12141	N24 W41	55	800	2.0

SUNSPOT DATA 9.1 CM

MW NO.	LAT CMD	L	MAG.	H	AREA	CNT	C	INT	FLUX
19062	N21 E51	56	(AP)	2					
19062	N20 E39	54	(BF)	3	-0	5	BXO		
19062	N20 E23	55	(BP)	2	-0	4	BXI		
19062	N20 E14	55	(BP)	3	10	5	CRI		
19062	N21 W01	55	(BP)	3	10	2	CRO		
19062	N21 W16	59	(BP	3	10	1	HRX		

MCMATH REGION 12138 CMP DATE 15.7

CALCIUM PLAGE DATA

YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT
72	12	11	12138	S11 E54	56	1800	1.5
72	12	14					
72	12						
72	12	15					
72	12						
72	12	16					
72	12						
72	12	17	12138	S11 W25	55	1400	2.5
72	12	18	12138	S10 W41	55	1100	2.0

SUNSPOT DATA 9.1 CM

MW NO.	LAT CMD	L	MAG.	H	AREA	CNT	C	INT	FLUX
19053	S09 E06	63	A	0					
19064	S11 E13	56		0					
19063	S10 W06	60	(AP)	2					
19064	S12 E01	53	(AP)	2					
19063	S10 W19	62	AP	0					
19064	S13 W12	55	(AP)	2	-0	1	AXX		

Note: When there is only one side of the parenthesis around the magnetic type of sunspot it means that only half of the sunspot group was measured. The parenthesis is on whichever half was measured, either the leader or the follower.

REGIONS OF SOLAR ACTIVITY

DECEMBER 1972

MCMATH REGION 12139 CMP DATE 15.7

CALCIUM PLAGE DATA

YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT
72	12	11	12139	S18 E52	58	700	3.5
72	12	12					
72	12	13					
72	12	14					
72	12	15					
72	12						
72	12	16					
72	12	17	12139	S18 W25	55	1700	3.0
72	12	18	12139	S17 W40	54	1500	3.0
72	12	19					
72	12	20					
72	12	21					
72	12	22					

SUNSPOT DATA

MW NO.	LAT CMD	L	MAG.	H	AREA	CNT	C	9.1 CM INT	9.1 CM FLUX
19061	S20 E48	59	(BP)	3	20	4	CSO	14	8
19061	S20 E34	59	(BP)	4	390	22	DAI	22	13
19061	S20 E19	59	(BP)	5	400	16	DAI	18	10
19061	S20 E09	60	(BP)	5	370	26	EKI	22	13
19061	S20 W04	58	(BP)	5	350	19	EKI	26	15
19066	S15 W01	55	(BP)	1					
19061	S20 W16	59	(BP)	4	300	15	EKI	18	10
19061	S20 W32	58	BP	0	320	10	EAO	18	11
19061	S20 W41	57	(BP)	6				18	11
19061	S20 W54	57	(BP)	5	120	5	CSI	15	9
19061	S20 W75	66	(AP)	4	130	1	HSX	12	7
	S16 W82				120	1	HSX	7	4
								6	3

MCMATH REGION 12140 CMP DATE 16.5 RETURN OF REGION 12114 ROTATION 3

CALCIUM PLAGE DATA

YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT
72	12	11	12140	S16 E65	45	900	2.0
72	12	17	12140	S15 W14	44	700	1.5
72	12	18	12140	S17 W28	42	500	1.5

SUNSPOT DATA

MW NO.	LAT CMD	L	MAG.	H	AREA	CNT	C	9.1 CM INT	9.1 CM FLUX

MCMATH REGION 12143 CMP DATE 18.8

CALCIUM PLAGE DATA

YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT
72	12	11	12143				
72	12	12					
72	12	13					
72	12	14					
72	12	15					
72	12	16					
72	12	17	12143	S06 E15	15	2200	3.5
72	12	18	12143	S06 E00	14	1800	3.5
72	12	19					
72	12	24					

SUNSPOT DATA

MW NO.	LAT CMD	L	MAG.	H	AREA	CNT	C	9.1 CM INT	9.1 CM FLUX
								5	3
								8	4
								10	6
19065	S05 E55	14	(A)	1				12	7
19065	S04 E40	14	(AF)	1	-0	1	AXX	4	3
19065	S07 E30	13	(AF)	1				5	3
	S06 E10				10	1	BXO	12	7
19065	S07 W01	17	BF	0				12	7
	S08 W17				20	2	BXO	6	3
								3	2

MCMATH REGION 12142 CMP DATE 19.3

CALCIUM PLAGE DATA

YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT
72	12	17	12142	N18 E23	7	200	1.5
72	12	18	12142	N18 E06	8	200	1.5

SUNSPOT DATA

MW NO.	LAT CMD	L	MAG.	H	AREA	CNT	C	9.1 CM INT	9.1 CM FLUX

MCMATH REGION 12148 CMP DATE 19.5

CALCIUM PLAGE DATA

YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT
72	12	18	12148	S12 E09	5	100	2.0

SUNSPOT DATA

MW NO.	LAT CMD	L	MAG.	H	AREA	CNT	C	9.1 CM INT	9.1 CM FLUX

MCMATH REGION 12144 CMP DATE 20.5 RETURN OF REGION 12116 ROTATION 2

CALCIUM PLAGE DATA

YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT
72	12	15					
72	12	16					
72	12	17	12144	S06 E37	354	800	3.0
72	12	18	12144	S07 E22	353	500	3.0
72	12	19					
72	12	20					
72	12	21					

SUNSPOT DATA

MW NO.	LAT CMD	L	MAG.	H	AREA	CNT	C	9.1 CM INT	9.1 CM FLUX
19067	S07 E64	351	(BP)	2					
19067	S08 E51	353	(B)	1					
19067	S08 E34	353	B	0	50	6	CRO		
19067	S08 E21	356	(BP	3	50	7	BXO	8	5
19067	S08 E12	352	(B)	3	30	4	DAO		
	S07 W01				30	4	CRO		
19067	S10 W14	351	AP	0	10	3	AXX		

REGIONS OF SOLAR ACTIVITY

DECEMBER 1972

MCMATH REGION 12145 — CMP DATE 21.5 — RETURN OF REGION 12124 — ROTATION 2

CALCIUM PLAGE DATA

YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT
72	12	17	12145	N17 E52	339	600	3.0
72	12	18	12145	N16 E34	341	800	3.0
72	12	19					
72	12	20					
72	12	21					
72	12	22					
72	12	23					
72	12	24					
72	12	25					
72	12	26					
72	12	27	12145	N17 W82	339	1100	2.5

SUNSPOT DATA — 9.1 CM

MW NO.	LAT CMD	L	MAG.	H	AREA	CNT	C	INT	FLUX
19068	N15 E46	341	B	0	50	5	CRO		
19068	N16 E35	342	(B)	4				8	5
19068	N16 E21	343	(B)	5	30	9	BXO	12	7
19068	N17 E06	345	(BP)	4	140	12	DAO	10	6
19068	N17 W06	343	(B)	5	130	9	DAO	8	4
19068	N17 W22	342	B	0	130	13	BSO	8	5
19068	N18 W31	341	(B)	5	120	4	DSO		
19068	N18 W49	343	BP	0	100	7	DSO	6	4
19068	N17 W61	344	BP	0	60	1	HRX	8	4
19068	N16 W76	347	(AP)	2	30	1	HSX		

MCMATH REGION 12146 — CMP DATE 22.3 — RETURN OF REGION 12118* — ROTATION 4

CALCIUM PLAGE DATA

YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT
72	12	17	12146	S10 E63	328	700	1.0
72	12	18	12146	S10 E45	330	800	1.5
72	12	21					
72	12	23					
72	12	26					
72	12	27	12146	S12 W71	328	600	3.0
72	12	28					

SUNSPOT DATA — 9.1 CM

MW NO.	LAT CMD	L	MAG.	H	AREA	CNT	C	INT	FLUX
19070	S11 E10	327	(BP	3					
19072	S18 W16	326	(A)	2					
19074	S13 W56	327	(AP)	2				4	2
19074	S14 W73	329	(B)	3	-0	2	BXO	5	3
19074	S14 W88	332	A	0	10	1	AXX	5	3

MCMATH REGION 12147 — CMP DATE 23.6

CALCIUM PLAGE DATA

YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT
72	12	17	12147	N02 E83	308	900	1.0
72	12	18	12147	N01 E65	310	800	2.0
72	12	24					
72	12	25					
72	12	26					
72	12	27	12147	N01 W54	311	500	1.5
72	12	29					

SUNSPOT DATA — 9.1 CM

MW NO.	LAT CMD	L	MAG.	H	AREA	CNT	C	INT	FLUX
								3	2
								3	2
								2	1
								4	2

MCMATH REGION 12149 — CMP DATE 23.7

CALCIUM PLAGE DATA

YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT
72	12	17					
72	12	18	12149	N17 E62	313	300	2.0
72	12	19					
72	12	20					
72	12	21					
72	12						
72	12	22					
72	12						
72	12	23					
72	12	24					
72	12	25					
72	12						
72	12	26					
72	12						
72	12	27	12149	N15 W53	310	2300	3.5
72	12	28					
72	12	29					

SUNSPOT DATA — 9.1 CM

MW NO.	LAT CMD	L	MAG.	H	AREA	CNT	C	INT	FLUX
								7	4
								9	5
19069	N17 E64	313	(AF)	2					
19069	N17 E50	314	BF)	2					
19069	N17 E37	314	BF	0	20	4	BXO	5	3
19069	N11 E30	307	(BF)	5	120	16	DAI	19	11
	N16 E30				20	3	BXO		
19069	N11 E14	306	BF	0	240	33	DSI	15	9
	N18 E14				-0	1	AXX		
19069	N11 E01	309	(BP)	5	300	19	EAO		
19069	N11 W15	309	B	0	200	29	EAO	15	9
19073	N16 W35	318	AP	0	10	1	AXX	16	10
19059	N11 W26	309	BP	0	350	17	EKI		
19073	N16 W46	317	(BP)	2	10	1	AXX	15	9
19059	N12 W40	311	(BP)	5	280	28	EAI		
19069	N11 W55	311	(D)	5	100	10	EKI	20	12
19069	N11 W70	314		0	240	5	EAI	15	9
19069	N11 W86	315		0	210	2	DSO		

MCMATH REGION 12150 — CMP DATE 24.5 — RETURN OF REGION 12118* — ROTATION 4

CALCIUM PLAGE DATA

YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT
72	12	18	12150	S17 E66	309	800	1.0
72	12	19					
72	12	20					

SUNSPOT DATA — 9.1 CM

MW NO.	LAT CMD	L	MAG.	H	AREA	CNT	C	INT	FLUX
								9	5
								6	4

(cont'd)

*An asterisk beside the "Return of Region" number indicates that the new region is only part of the area of the old region.

REGIONS OF SOLAR ACTIVITY

DECEMBER 1972

(cont'd)

72	12	21															5	3
72	12	22															4	3
72	12	24															3	2
72	12	25															4	2
72	12	26															3	2
72	12	27	12150	S18 W42	299	600	1.0											
72	12	30							S17 W71			40	4	DRO	4	3		

MCMATH REGION 12151 CMP DATE 25.9 RETURN OF REGION 12126 ROTATION 2

CALCIUM PLAGE DATA								SUNSPOT DATA								9.1 CM	
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	AREA	CNT	C	INT	FLUX
72	12	27	12151	S12 W24	281	700	1.5	19075	S12 W28	284	(AP)	2				3	2
72	12	28														2	1
72	12	31	12151	S13 W80	285	200	1.0									4	2

MCMATH REGION 12152 CMP DATE 26.3

CALCIUM PLAGE DATA								SUNSPOT DATA								9.1 CM	
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	AREA	CNT	C	INT	FLUX
72	12	20							N10 E79				20	3	BXO		
72	12	21						19071	N19 E60	277	(B)	4	10	5	BXO		
72	12	27	12152	N20 W19	276	300	1.5										
72	12	31	12152	N18 W70	275	500	1.5										

MCMATH REGION 12156 CMP DATE 27.4

CALCIUM PLAGE DATA								SUNSPOT DATA								9.1 CM	
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	AREA	CNT	C	INT	FLUX
72	12	31	12156	S01 W56	261	100	1.0										

MCMATH REGION 12153 CMP DATE 27.5 RETURN OF REGION 12125 ROTATION 2

CALCIUM PLAGE DATA								SUNSPOT DATA								9.1 CM	
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	AREA	CNT	C	INT	FLUX
72	12	27	12153	S13 W03	260	300	2.0										
72	12	28						19076	S15 W19	263	A	0					
72	12	29						19076	S16 W33	262	(BP)	3	60	5	DAO	5	3
72	12	30						19076	S16 W45	264	(BP)	4				4	2
72	12	31	12153	S15 W55	260	1100	2.5	19076	S15 W65	266	(BP	3	-0	5	CAO		
73	1	1	12153	S17 W70	260	900	3.0		S15 W70				10	1	HRX	4	2
73	1	2	12153	S16 W82	258	1100	2.0									3	2

MCMATH REGION 12157 CMP DATE 28.9

CALCIUM PLAGE DATA								SUNSPOT DATA								9.1 CM	
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	AREA	CNT	C	INT	FLUX
72	12	31	12157	N16 W36	241	100	1.5										
73	1	1	12157	N15 W50	240	100	1.5										

MCMATH REGION 12161 CMP DATE 30.0

CALCIUM PLAGE DATA								SUNSPOT DATA								9.1 CM	
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	AREA	CNT	C	INT	FLUX
73	1	1	12161	N36 W37	227	100	1.5										
73	1	2	12161	N09 W50	226	200	1.0										
73	1	3	12161	N08 W59	225	200	1.0										

MCMATH REGION 12154 CMP DATE 30.5

CALCIUM PLAGE DATA								SUNSPOT DATA								9.1 CM	
YR	MO	DA	MC NO.	LAT CMD	L	AREA	INT	MW NO.	LAT CMD	L	MAG.	H	AREA	CNT	C	INT	FLUX
72	12	27	12154	N17 E37	220	400	1.5										
72	12	31	12154	N17 W15	220	400	1.5										

REGIONS OF SOLAR ACTIVITY

DECEMBER 1972

MCMATH REGION 12155 CMP DATE 31.3 RETURN OF REGION 12128 ROTATION 2

				CALCIUM PLAGE DATA					SUNSPOT DATA								9.1 CM
YR	MO	DA	HC NO.	LAT CMD	L	AREA	INT		MW NO.	LAT CMD	L	MAG.	H	AREA	CNT	C	INT FLUX
72	12	27	12155	N03 E48	209	200	2.0										
72	12	31	12155	N03 W05	210	100	2.0										
73	1	1	12155	N03 W21	211	100	2.0										
73	1	2	12155	N03 W38	214	300	2.0										
73	1	3	12155	N02 W50	216	300	1.5										
73	1	5	12155	N03 W76	217	200	1.0										

MCMATH REGION 12167 CMP DATE 31.4

				CALCIUM PLAGE DATA					SUNSPOT DATA								9.1 CM
YR	MO	DA	HC NO.	LAT CMD	L	AREA	INT		MW NO.	LAT CMD	L	MAG.	H	AREA	CNT	C	INT FLUX
73	1	3	12167	S18 W42	208	200	1.5										

Note: Because of extremely bad weather conditions at McMath-Hulbert during the month of December, some of the region identifications may be subject to error, and some short-lived regions may have been missed.
No calcium spectroheliograms were secured at the McMath-Hulbert Observatory on December 2, 4, 5, 8-10, 12-16, 19-26 and 28-30, 1972.
No sunspot observations were made at Mt. Wilson Observatory on December 4, 7 and 8, 1972.

DAILY CALCIUM PLAGE INDEX

DECEMBER 1972

YR	MO	DAY	INDEX	YR	MO	DAY	INDEX	YR	MO	DAY	INDEX
72	12	1	11.7	72	12	11	17.5	72	12	21	*
72	12	2	*	72	12	12	*	72	12	22	*
72	12	3	6.8	72	12	13	*	72	12	23	*
72	12	4	*	72	12	14	*	72	12	24	*
72	12	5	*	72	12	15	*	72	12	25	*
72	12	6	5.5	72	12	16	*	72	12	26	*
72	12	7	8.1	72	12	17	23.7	72	12	27	9.0
72	12	8	*	72	12	18	18.7	72	12	28	*
72	12	9	*	72	12	19	*	72	12	29	*
72	12	10	*	72	12	20	*	72	12	30	*
								72	12	31	8.0

* NO OBSERVATIONS

SOLAR X-RAYS MEASURED BY SATELLITE
SOLRAD 10 – EXPLORER 44

DECEMBER 1972

NAVAL RESEARCH LABORATORY 1 - 8A HOURLY AVERAGES (10^{-3} ergs/cm^2/sec)

DAY	HOUR																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	0.03	0.03	0.04	0.03	0.05	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.05	0.05	0.04	0.04	0.03	0.04	0.04
2	0.04	0.03	0.04	0.03	0.03	0.03	0.03	0.03	0.03	0.09	0.09	0.06	0.07	0.06	0.05	0.04	0.05	0.05	0.05	0.05	0.10	0.06	0.05	0.07
3	0.05	0.04	0.06	0.05	0.04	0.05	0.05	0.06	0.05	0.04	0.06	0.05	0.05	0.04	0.04	0.05	0.05	0.05	0.06	0.05	0.05	0.05	0.05	0.05
4	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.06	0.04	0.05	0.05	0.05	0.06	0.11	0.13	0.23	0.16	0.21	0.27
5	0.22	0.15	0.11	0.08	0.06	0.06	0.06	0.06	0.06	0.05	0.06	0.06	0.06	0.05	0.05	0.05	0.05	0.06	0.07	0.06	0.05	0.04	0.06	0.05
6	0.05	0.06	0.05	0.05	0.04	0.04	0.04	0.04	0.05	0.04	0.05	0.14	0.09	0.10	0.05	0.05	0.05	0.04	0.06	0.05	0.06	0.07	0.11	0.15
7	0.13	0.19	0.20	0.20	0.32	0.35	0.52	1.07	0.25	0.31	0.27	0.24	0.21	0.19	0.19	0.16	0.15	0.13	0.14	0.13	0.11	0.12	0.13	0.12
8	0.13	0.12	1.06	0.80	0.19	0.15	0.16	0.16	0.14	0.19	0.19	0.17	1.09	0.61	0.18	0.11	0.14	0.13	0.28	0.33	0.16	0.28	0.22	11.6
9	1.94	0.55	0.25	0.23	0.20	0.18	0.17	0.15	0.13	0.11	0.12	0.12	0.13	0.14	0.13	0.21	7.08	2.66	0.64	0.37	0.33	0.18	0.19	0.22
10	14.1	21.0	2.11	1.19	0.79	0.40	0.63	0.29	0.24	0.23	0.19	0.19	0.17	0.15	0.15	0.17	0.24	0.32	0.85	0.51	0.57	0.35	0.44	0.23
11	0.20	0.20	0.23	0.21	0.20	0.31	0.20	0.31	0.26<	0.39<	0.38<	0.64	0.50	0.38	0.46	0.50	0.32	0.60	0.54	0.65	0.82	0.32	0.34	0.35
12	0.62	1.15	0.97	0.37	0.31	0.61	0.67	1.25	0.38	0.36	0.32	0.64	1.05	0.79	0.83	1.39	0.66	0.68	1.44	0.61	0.80	0.79	0.67	0.64
13	0.58	0.58	0.52	0.88	0.78	0.57	0.49	0.57	0.87	0.71	1.19	0.53	1.02	0.57	0.33	0.30	0.51	1.55	1.16	0.55	0.55	0.62	0.36	1.38
14	0.61	0.26	0.34	0.27	0.29	0.25	0.45	0.36	0.55	0.26	0.23	0.22	2.21	2.51	0.96	0.91	0.64	0.31	0.31	0.31	0.28	0.27	0.30	0.29
15	0.21	0.21	0.31	0.58	0.26	5.64	15.0	2.57	1.89	0.87	0.60	0.50	0.34	0.40	0.32	0.40	0.37	0.23	0.28	0.26	0.30	0.29	0.26	0.29
16	0.27	0.29	0.35	0.26	53.4	4.70<	1.21<	0.52	3.60	0.36	0.22	0.24	0.22	0.33	0.30	0.19	0.15	0.18	0.18	0.14	0.17	0.20	0.15	0.30
17	0.92	0.27	0.18	0.23	0.21	0.24	0.22	0.27	1.58	0.64	1.20	0.66	0.31	0.26	0.25	0.25	1.21	0.35	0.30	0.25	0.52	1.25	1.27	1.29
18	1.16	0.67	0.50	0.79	0.83	0.94	3.68	9.59	1.60	0.78	0.34	0.25	0.50	0.26	0.23	0.26	0.31	0.27	0.23	0.23	0.38	1.16	0.32	0.29
19	0.26	0.23	0.24	0.25	0.23	0.22	0.38	0.34	0.29	0.22	0.28	0.22	0.30	0.28	0.34	0.26	0.24	0.21	0.23	0.28	1.00	0.20	0.19	0.17
20	0.18	0.23	0.21	0.16	0.15	0.15	0.14	0.16	0.27	0.15	0.14	0.14	0.15	0.14	0.15	0.15	0.25<	0.24<	0.20<	0.21<	0.25<	0.18<	0.24<	0.19<
21	0.22<	0.20	0.21	0.20	0.22	0.45	0.26	0.23	0.27	0.31	0.31	0.42	0.58	0.43	0.32	0.92	0.67	0.49	0.32	0.48	0.40	0.31	0.28	0.66
22	0.60	0.47	0.24	0.33	0.22	0.30	1.16	2.07	0.94	0.70	0.22	0.54	0.20	0.34	1.07	0.57	1.30	0.36	0.29	0.30	0.29	0.22	0.26	0.18
23	0.55	0.48	0.15	0.15	0.24	1.81	0.40	0.23	0.28	0.26	0.19	0.25	0.20	0.34	0.24	0.26	0.19	0.16	0.13	0.12	0.13	0.15	0.14	0.18
24	0.19	0.12	0.13	0.12	0.14	0.11	0.11	0.21	0.17	0.17	0.12	0.10	0.12	0.11	0.10	0.12	0.12	0.12	0.15	0.22	0.24	0.63	2.15	0.83
25	1.03	0.90	1.03	1.26	0.65	0.20	0.24	0.42	0.62	0.45	0.28	0.21	0.31	0.28	0.15	0.19	0.13	0.16	0.16	0.16	0.18	0.21	0.24	0.23
26	0.20	0.16	0.20	0.18	0.20	0.24	0.17	0.15	0.14	0.14	0.12	0.14	0.13	0.12	0.11	0.11	0.30	0.31	0.30	0.15	0.13	0.11	0.11	0.15
27	0.84	0.66	0.20	0.18	0.15	0.19	0.19	0.21	0.32	0.20	0.20	0.22	0.35<	0.26<	0.16	0.13	0.14	0.13	0.15	0.17	0.17	0.23	0.15	0.16
28	0.16	0.28	0.14	0.13	0.16	0.15	0.16	0.14	0.20	0.12	0.15	0.15	0.16	0.18	0.17	0.15	0.18	0.16	0.16	0.14	0.16	0.19	0.72	0.43
29	0.22	0.28	0.26	0.28	0.25	0.30	0.28	0.26	0.28	0.42	0.31	0.32	0.33	0.49	0.69	1.01	0.45	0.64	0.59	0.52	0.68	1.29	1.07	0.62
30	1.30	0.86	0.53	0.55	0.68	1.13	0.74	0.47	3.20	0.96	0.31	0.37	0.54	0.27	1.10	1.24	0.31	0.32	0.48	0.41	0.29	0.29	0.29	0.32
31	0.53	0.63	4.64	0.70	2.91	1.96	0.97	0.95	0.30	0.22	0.32	0.22	0.18	0.29	0.18	0.20	0.15	0.17	0.18	0.22	0.22	0.21	0.20	0.18

VALUES MARKED WITH (<) WERE CALCULATED FROM DATA PROVIDED BY SOLRAD 9

SOLAR X-RAYS MEASURED BY SATELLITE
SOLRAD 10 – EXPLORER 44

DECEMBER 1972

NAVAL RESEARCH LABORATORY 8 - 20A HOURLY AVERAGES (10^{-2} ergs/cm^2/sec)

DAY	HOUR																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	0.57	0.59	0.51	0.52	0.49	0.48	0.48	0.46	0.45	0.46	0.45	0.45	0.45	0.45	0.46	0.45	0.46	0.46	0.45	0.51	0.45	0.57	0.55	0.46
2	0.46	0.46	0.43	0.43	0.45	0.42	0.45	0.39	0.40	0.53	0.55	0.46	0.49	0.47	0.46	0.46	0.46	0.46	0.45	0.53	0.65	0.48	0.56	0.47
3	0.43	0.41	0.45	0.45	0.41	0.41	0.41	0.46	0.41	0.39	0.41	0.39	0.40	0.39	0.38	0.39	0.39	0.40	0.44	0.43	0.51	0.35	0.45	0.34
4	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.35	0.33	0.33	0.33	0.33	0.36	0.53	0.48	0.80	0.67	0.65	0.80
5	0.70	0.59	0.47	0.39	0.35	0.33	0.33	0.33	0.33	0.33	0.34	0.37	0.36	0.33	0.33	0.34	0.33	0.35	0.47	0.33	0.57	0.37	0.34	0.33
6	0.33	0.33	0.33	0.33	0.32	0.32	0.32	0.32	0.33	0.33	0.33	0.45	0.40	0.39	0.33	0.32	0.34	0.32	0.54	0.45	0.34	0.45	0.46	0.57
7	0.52	0.61	0.60	0.67	0.86	0.89	1.07	1.73	0.76	0.86	0.82	0.75	0.73	0.72	0.67	0.62	0.69	0.70	0.72	0.77	0.56	0.67	0.59	0.58
8	0.60	0.59	1.58	1.27	0.74	0.70	0.70	0.66	0.67	0.76	0.75	0.75	1.55	1.32	0.80	0.59	0.64	0.77	0.84	1.26	0.77	0.81	0.84	10.9
9	3.67	1.44	0.99	0.97	0.90	0.85	0.85	0.77	0.71	0.62	0.66	0.65	0.70	0.71	0.73	0.88	6.02	4.56	1.55	1.77	1.18	0.88	0.87	0.92
10	5.85	12.7	3.59	2.62	1.60	1.24	1.42	1.03	0.98	0.93	0.87	0.87	0.85	0.83	0.81	0.88	0.93	1.45	1.93	1.57	1.32	1.18	1.24	0.98
11	0.91	0.90	0.99	0.94	0.90	1.08	0.90	1.10				1.55	1.39	1.28	1.33	1.42	1.57	1.51	1.93	1.87	2.15	1.29	1.32	1.41
12	1.98	2.76	3.14	1.46	1.35	1.63	1.78	2.51	1.44	1.41	1.36	1.74	2.72	2.59	2.74	2.96	1.81	1.61	3.13	1.75	1.92	1.87	1.78	1.68
13	1.84	1.62	1.55	2.18	1.72	1.51	1.49	1.46	1.88	1.78	2.96	1.58	2.68	1.92	1.36	1.31	1.74	3.43	3.33	1.60	1.48	1.56	1.42	2.37
14	1.83	1.24	1.34	1.23	1.26	1.22	1.45	1.40	1.52	1.26	1.22	1.13	3.21	4.80	2.52	2.87	2.10	1.61	1.46	1.24	1.24	1.26	1.29	1.33
15	1.13	1.08	1.20	1.48	1.21	5.18	13.6	5.38	4.38	2.68	1.63	1.58	1.36	1.44	1.62	1.80	1.40	1.34	1.25	1.26	1.25	1.27	1.25	1.23
16	1.22	1.25	1.26	1.17	20.5	4.12	2.96	1.43	2.03	1.33	1.12	1.17	1.14	1.41	1.43	1.24	0.95	1.06	0.99	0.98	0.94	1.02	0.98	1.17
17	2.58	1.26	1.01	1.13	1.12	1.12	1.10	1.19	3.86	1.86	2.33	1.84	1.33	1.31	1.17	1.47	2.41	1.71	1.30	1.24	1.44	3.15	2.96	3.09
18	3.05	2.85	1.68	2.11	2.59	2.94	4.73	10.5	4.44	2.61	1.46	1.26	1.38	1.36	1.21	1.51	1.56	1.33	1.25	1.22	1.38	2.96	1.44	1.55
19	1.25	1.16	1.18	1.19	1.13	1.11	1.37	1.31	1.27	1.12	1.23	1.10	1.17	1.29	1.56	1.19	1.20	1.08	1.16	1.25	1.88	1.11	1.03	1.11
20	1.00	1.11	1.05	0.95	0.91	0.87	0.85	0.91	1.01	0.86	0.86	0.87	0.92	0.97	1.07	0.86								
21		0.99	1.01	0.99	0.99	1.08	1.13	1.02	1.08	1.15	1.16	1.28	1.59	1.33	1.47	2.68	1.99	1.54	1.35	1.50	1.46	1.63	1.33	1.81
22	1.71	1.43	1.13	1.21	1.09	1.16	2.19	3.81	2.54	2.01	1.18	1.42	1.10	1.24	2.30	1.48	2.89	1.32	1.14	1.16	1.25	1.06	1.18	0.95
23	1.30	1.37	0.88	0.87	0.99	3.16	1.31	1.11	1.10	1.07	1.00	1.07	1.16	1.45	1.05	1.10	0.98	0.88	0.80	0.78	0.91	0.85	0.98	0.82
24	0.87	0.73	0.73	0.72	0.72	0.69	0.67	0.81	0.85	0.76	0.69	0.69	0.79	0.82	0.60	0.69	0.72	0.72	0.80	0.93	1.19	1.54	3.09	2.15
25	2.03	1.40	2.22	2.96	1.95	0.90	0.97	1.23	1.46	1.30	1.15	1.09	1.13	1.28	0.86	0.89	0.77	0.84	0.89	0.85	1.13	0.98	0.89	0.93
26	0.88	0.77	0.82	0.85	0.86	0.88	0.80	0.74	0.73	0.77	0.70	0.82	0.72	0.81	0.67	0.62	0.80	0.93	0.98	0.86	0.72	0.76	0.62	0.69
27	1.67	1.50	0.85	0.85	0.74	0.78	0.83	0.80	0.85	0.89	0.83	0.96			0.74	0.68	0.71	0.73	0.79	0.96	0.81	1.00	0.75	0.81
28	0.80	1.00	0.76	0.72	0.76	0.75	0.77	0.72	0.79	0.70	0.80	0.85	0.94	0.85	0.80	0.74	0.85	0.84	0.85	0.95	0.84	0.93	1.32	1.15
29	0.95	1.03	1.10	1.13	1.10	1.18	1.14	1.14	1.16	1.39	1.58	1.30	1.44	1.57	1.58	2.86	1.58	1.82	1.65	2.08	2.09	2.96	2.96	1.76
30	3.35	2.55	1.58	1.59	1.89	2.36	2.17	1.49	3.69	2.27	1.40	1.21	1.44	1.14	1.76	2.88	1.27	1.36	1.78	1.40	1.30	1.25	1.23	1.26
31	1.32	1.47	5.14	1.92	3.34	2.71	2.39	2.01	1.22	1.01	1.26	1.06	0.91	1.06	0.87	0.92	0.89	0.98	1.07	0.91	1.01	0.99	0.97	0.93

SOLAR X-RAYS BY SATELLITE
SOLRAD 10 - EXPLORER 44

DECEMBER 1972

OUTSTANDING EVENTS

NAVAL RESEARCH LABORATORY

DAY	START TIME	0.5-3A FLUX XE-5	PEAK TIME	1-8A FLUX XE-4	PEAK TIME	8-20A FLUX XE-3	PEAK TIME	END TIME	COMMENTS
8	2322E	62.40D	2322E	288.00D	2322E	222.00D	2322E	2358D	
9	1604	57.60	1608	144.00	1606	88.80	1607	1730D	MULTIPLE PEAKS
10	0043E	115.00	0055	288.00	0054	148.00	0059	0220	
14	1252	3.72	1252	32.20	1252	59.20	1258	1301	
15	0551E	57.60	0607	288.00	0611	178.00	0612	0731	
16	0402E	324.00D	0402E	1010.00D	0402E	414.00	0403	0459D	
18	0651	19.20	0658	144.00	0659	133.00	0710	0741D	
30	0800	28.80	0801	93.40	0802	88.80	0803	0804D	
31	0223	67.20	0228	144.00	0227	104.00	0232	0245	
31	0430	38.40	0433	144.00	0433	74.00	0433	0440D	
31	0547	24.00	0548	70.80	0549	59.20	0548	0557	

SUDDEN IONOSPHERIC DISTURBANCES

DECEMBER 1972

DAY	UNIVERSAL TIME START	END	MAX	IMP	WIDE SPREAD INDEX	NUMBER OF STATION REPORTS BY TYPE SWF	SCNA	SEA	SPA	LF-SPA	SES	SFD	KNOWN FLARE	McMATH REGION
08	0244	0348	0253	1-	1				1				0253E	12136
08	2257	0218	2309	2	5	2			2	4	8		2300E	12136
09	1603	1815	1620	2	5	2		4	1		9		1600	12136
10	0029	0326	0106	2-	5	1			2	2	2		0033	12136
11	0502	0530	0505	1-	1				1				0501	12136
11	0850E	0902	0855	1-	1			1					0855E	12136
11	1145	1200	1151	1-	1			1					1146	12136
11	1202	1209	1206	1-	1			1					1201	12136
11	1723	1815	1731	2+	5			3	1	2	9		1722	12136
12	1809	1811	1810	1-	1							1	1805	12139
13	2342	0001	2347	1-	1				1				2341	12139
14	1520	1630	1526	1-	1				1				1518	12139
14	2251	2315	2259	1-	1				1				*	
15	0539	0755	0612	2-	3	1			2	1	2		0536E	12143
16	0341	0654	0354	2+	5	3	2		2		2		0346E	12136
16	0758	0929	0841	1-	1			2					*	
16	0936	1007	0953	1-	1			1					*	
16	2057	2150	2105	1-	5			2			5	1	2056	12139
18	0650	0750	0709	1	3				2				0645	12143
21	1420	1430	1425	1	1					1	1		1418	12145
23	0521	0602	0533	1-	1				1				0518	12149
24	2204	2217	2206	1-	5				2	1		1	2205	12149
25	0046	0119	0055	1-	1				1				0050	12149
25	1000	1012	1005	1-	1			1			1		0955	12142
26	1230	1300	1238	1	1					1	1		1226E	12149
26	2013	2015	2014	1-	1							1	2010	12149
30	1430	1630	1443	1	5	1		2	1		2		1438E	12160
30	1856	1946	1859	1-	1				1				1859	12160
31	0220	0406	0230	1	3	1			2	2	3		0225E	12160
31	0426	0538	0434	1+	5	1			2	3	5		0430E	12160
31	2038	2054	2039	1-	1				1	1			*	

STATIONS REPORTING FOR DECEMBER 1972

AAVSO (A1, A5, A17, A22, A23, A26, A29, A31, A32, A34) (SEA)
(A1, A19, A21, A28, A30, A31, A33, A35, A36, A37) (SES)
BAHRAIN (BH) (SWF)
BOULDER (BO) (SCNA, SEA)
CAPE RACE (LORAN-C) (CP) (LF-SPA, SES)
DARMSTADT (DA) (SWF)
ENKOPING (SW) (SWF, SPA)
GESASHI (LORAN-C) (GE) (LF-SPA, SES)
HAWAII (HA) (SFD)
HERSTMONCEUX (HC) (SEA)
HIRAISO (HI) (SWF)
HOBART (TA) (SEA)
HOKKAIDO (LORAN-C) (HO) (LF-SPA, SES)
HUANCAYO (HU) (SWF)
INUBO (IN) (SPA)
JUPITER (LORAN-C) (JP) (LP-SPA, SES)
KURE (LORAN-C) (KR) (LF-SPA, SES)
MANILA (MA) (SWF, SCNA, SPA)
MARCUS (LORAN-C) (MR) (LF-SPA, SES)
MCMATH (MC) (SWF, SCNA)
NANTUCKET (LORAN-C) (NT) (LF-SPA, SES)
NEUSTRELITZ (NU) (SWF)
NEW DELHI (ND) (SWF, SCNA, SES)
PANSKA VES (PU) (SWF, SEA)
POITIERS (PO) (SEA)
PORT CLARENCE (LORAN-C) (PC) (LF-SPA, SES)
PRESTON (LO) (SEA)
SANDUR (LORAN-C) (SA) (LF-SPA, SES)
SAO PAULO (UM) (SPA, SES)
SITKINAK (LORAN-C) (SK) (LF-SPA, SES)
SOFIA (SF) (SES)
SYLT (LORAN-C) (ST) (LF-SPA, SES)
TABLE MOUNTAIN (TM) (SWF, SPA, LF-SPA)
TORINO (TN) (SPA)
TRINIDAD (TR) (SWF)
UPICE (UI) (SEA)
UPOLO POINT (LORAN-C) (UP) (LF-SPA, SES)
WHITE SANDS (WS) (SWF)
YAP (LORAN-C) (YP) (LF-SPA, SES)

PERIODS OF NO OBSERVATIONS:

DATE	TIME (UT) and STATION
01	1355-1735 UM (17 kHz)
03	1615-1633 TM
05-08	1537-2020 TR
05	0130-1320 TM, 1010-1347 UM (16 kHz), 1900-1915 TM
07	1700-2105 UM (18 kHz), 1920-1930 TM, 2300-2320 TM
08	0012-0040 TM, 1400-1700 UM (17 kHz)
11	1547-1805 TR
12-31	0200-2400 A5
12	1252-1300 TR
13-14	0630-1200 TR
13	1500-1520 UM (18 kHz)
15-31	0000-2400 A32
15	1355-1710 UM (17 kHz)
16-31	0700-1730 A30
16	1450-1755 WS
19	1000-1320 Um (16 kHz)
21	2000-2400 MC, 2004-2350 UM (18 kHz)
22	0000-1214 MC, 1400-1715 UM (17 kHz), 1842-2227 TR
23-31	0500-2400 A28
23	0830-2400 WS
24	0000-0036 WS, 0920-1955 WS
25-31	0500-2400 A29
26	1437-1851 TR
27	1327-1339 TR
31	0000-2400 PO, 1652-1737 MC

SID's BY McMATH REGION

DECEMBER 1972

DAY	36	39	42	43	45	49	60	X-RAY	UN-KNOWN	NO FP
01										
02										
03										
04										
05										
06										
07										
08	2									
09	1									
10	1									
11	5									
12		1								
13		1								
14		1								1
15				1						
16	1	1								2
17										
18				1						
20										
21					1					
22										
23						1				
24						1				
25			1			1				
26						2				
27										
28										
29										
30							2			
31							2			1

SOLAR RADIO EMISSION
SPECTRAL OBSERVATIONS

DECEMBER 1972

DEC 1972	TIMES OF OBSERVATION		STATION	EVENTS													SPECTRAL TYPE
				CENTIMETRIC BAND			DECIMETRIC BAND			METRIC BAND			DEKAMETRIC BAND				
	START UT	END UT		START UT	END UT	INT.	START UT	END UT	INT.	START UT	END UT	INT.	START UT	END UT	INT.		
01	0000	0720	CULG							0425.5		1					IIIB
			CULG							0427.5	0428.5	1					IIIG
	0729	1502	WEIS														
	1146	2106	SGMR														
	1401	2334	HARV														
	1830	2400	BOUL														
	2022	2400	CULG				2206.5	2207	1	2206.5	2207	1					IIIG
02	0000	0721	CULG														
	0724	1503	WEIS														
	1143	2106	SGMR														
	1400	2400	BOUL														
	2023	2400	CULG														
	1400	2334	HARV				2324	2325	1								IIIG
03	0000	0721	CULG														
	0724	0852	WEIS														
	1015	1444	WEIS														
	1300	2106	SGMR														
	1400	2400	BOUL														
	1401	2334	HARV														
	2022	2400	CULG														
04	0000	0722	CULG														
	0738	1447	WEIS														
	1145	2105	SGMR														
	1400	2400	BOUL														
	2023	2400	CULG														
	1401	2334	HARV				2037	2039	2								IIIGG
05	0000	0722	CULG							0550.5	0557.5	1					II
	0737	1447	WEIS														
	1203	2105	SGMR														
	1400	2335	HARV														
	2000	2400	BOUL														
	2023	2400	CULG														
06	0000	0723	CULG														
	0739	0945	WEIS														
	1023	1449	WEIS														
	1205	2105	SGMR														
	1400	2400	BOUL														
	1401	2335	HARV														
	2024	2400	CULG														
07	0000	0723	CULG														
	0740	1450	WEIS														
	1205	2105	SGMR														
	1400	2335	HARV														
	1400	2400	BOUL														
			CULG							2025	2307.5	1					I
	2025	2400	CULG				2025	2400									IN
08	0000	0724	CULG				0000	0322	1	0224	0724	1					IS
			CULG							0034.5		1					IIIB
			CULG				0540	0724	1								IS
	0740	1451	WEIS														
	1206	2105	SGMR														
	1400	2335	HARV							1401	2257	1					IN
	1400	2400	BOUL							1545.7	1545.8	1					III
			BOUL							1618.8	1619.8	1					IIIG
			BOUL							1643.7	1644.0	1					IIIG
			BOUL							1716.6	1717.3	1					IIIG
			BOUL							1846.6	1846.7	1					III
			BOUL							1850.9	1851.0	1					III
			BOUL							1905.8	1905.9	1					III
			BOUL							1921.2	1921.4	1					III
			BOUL							1934.8	1934.9	1					III
	2024	2400	CULG				2024	2259	1	2024	2400	1					IS
			BOUL							2255.9	2305.5	3					IIIG
			HARV				2257	2326	3								IVP IIIGG
			CULG				2257	2400		2300	2400	2					IV
			CULG				2258	2301	2	2258	2311	3					II
			HARV				2258.8		1	2258.8	2305	3					II
			HARV							2300	2312	3					IV
			HARV							2300	2302	3	2300	2302	3		IIIGG
			CULG							2300	2304.5	3	2300	2302.5	3		IIIGG
			CULG										2302	2330	1		
			BOUL							2304.5	2325.5	1					IV
			HARV							2312	2326	3					IVP
			HARV				2327	2334	1	2326	2334	1					IVP
09			CULG				0000	0137	1	0000	0222	2					IV
	0000	0724	CULG							0000	0724	1					IS
			CULG							0514		1					IIIB
			CULG							0528		1					IIIB
	0743	0905	WEIS														
	1053	1446	WEIS														
	1401	2335	HARV							1404	2329	1					IN
			HARV				1601	1609	3	1601	1609	2					IVP IIIG

SOLAR RADIO EMISSION
SPECTRAL OBSERVATIONS

DECEMBER 1972

DEC 1972	TIMES OF OBSERVATION		STATION	EVENTS													SPECTRAL TYPE
				CENTIMETRIC BAND			DECIMETRIC BAND			METRIC BAND			DEKAMETRIC BAND				
	START UT	END UT		START UT	END UT	INT.	START UT	END UT	INT.	START UT	END UT	INT.	START UT	END UT	INT.		
09			HARV							1602	1603	3	1602	1603	3		IIIG
	1400	2400	BOUL							1602.3	1602.7	2					III
			BOUL							1605.6	1605.8	1					III
			HARV										1606	1612	2		IIIGG
			HARV							1607	1614	2				II	
			BOUL							1607.0	1611.8	3					IIIGG
	1207	2105	SGMR										1607.3	1611.4	1		IIIG
			HARV				1611	1619	2								IIIGG
			BOUL							1612.5	1612.6	1					III
			BOUL							1612.8	1613.4	1				II	
			BOUL							1622.8	1732.0	1					IS
			BOUL							1629.0	1704.2	1					CONT
			CULG							2025	2400	1					IS
	2025	2400	CULG				2025	2400									IS,W
			CULG							2028.5	2349	1					IIIN
			CULG							2206	2207	1					IIIG
			BOUL							2206.2	2206.6	2					III
10	0000	0724	CULG				0000	0336.5	1	0000	0724	1					IS
			CULG				0033.5	0035	1	0034.5	0036	2	0035	0036	1		IIIG
			CULG				0033.5	0103.5	1	0042	0104	1				IV	
			CULG							0040.5	0042.5	1					IIIG
			CULG							0057.5	0106	1					IIIGG
			CULG							0218.5	0221.5	1					IIIG
			CULG							0336.5	0724	1					IIIN
	0744	1447	WEIS														
	1208	2105	SGMR										1321.9	1322.2	1		III
			SGMR										1354.7	1354.9	2		III
	1400	2400	BOUL							1629.7	1629.8	1					III
			BOUL							1709.4	1709.6	2					III
			BOUL							1814.5	1814.6	1					III
	1400	2336	HARV							1844	2331	1					IN
	2025	2400	CULG				2025	2400	1	2025	2400	1					IS
			CULG				2034	2035	1	2034	2035	1					IIIG
			HARV							2034	2035	3	203.	2035	3		IIIG
			BOUL							2035.0	2035.2	2					III
			CULG							2037.5	2257.5						IIIN,W
			BOUL							2158.7	2158.8	1					III
11	0000	0725	CULG				0000	0725		0000	0725						IW
			CULG							0213.5							IIIB,W
			CULG							0234		1					IIIB
			CULG							0527.5		1					IIIB
			CULG				0528	0528.5	1								FAST DRIFT
	0745	1449	WEIS														
	1209	2105	SGMR														
	1400	2400	BOUL														
	1401	2336	HARV				1658	1701	2	1658	1701	2					IIIGG
	2026	2400	CULG							2202		1					IIIB
12	0000	0709	CULG				0004.5	0115	1								I
			CULG				0008.5		1	0008.5		1					IIIB
			CULG				0043	0044	1	0043	0045	1					IIIGG
			CULG							0118.5	0120.5	1					IIIGG
			CULG							0122	0123	1					IIIG
			CULG							0126	0531.5	1					IIIN
			CULG							0312	0313	2	0312	0313	1		IIIG
			CULG							0317	0319	1					IIIG
			CULG							0320.5	0321.5	1					IIIG
			CULG							0358	0359.5	2	0358	0359	1		IIIG
			CULG							0402	0402.5	1					IIIG
			CULG							0420.5	0423	1					IIIG
			CULG				0457	0457.5	1	0456	0458	2					IIIG
	0746	1009	WEIS														
	1030	1449	WEIS														
	1209	2105	SGMR														
	1400	2336	HARV				1742	1743	3								IIIG
	1400	1700	BOUL							1905.6	1905.7	1					III
	2028	2400	CULG														
	2100	2400	BOUL							2238.8	2239.3	1					III
13	0000	0725	CULG							0100	0101.5	1					IIIGG
			CULG				0329.5	0331	1	0329.5	0333.5	2	0330	0332.5	1		IIIGG
			CULG							0720	0720.5						IIIG,W
			CULG							0722	0725	1					IIIGG,U
	0748	1447	WEIS							1122.5	1122.8	1					IIIB
			WEIS							1321.4	1321.6	1					IIIB
	1210	2105	SGMR										1343.9	1341.9	1		III
	1400	1600	BOUL														
	1400	2336	HARV				1657	1713	1								IN
	1900	2400	BOUL														
	2027	2400	CULG							2144	2144.5						IIIG,W
			CULG							2158.5							IIIB,W
14	0000	0726	CULG							0018	0022	1					IIIG
			CULG				0033.5	0034	1	0033.5	0036.5	1					IIIG
			CULG				0042.5	0301	1								IS
			CULG							0202.5	0205.5						IIIG,W
			CULG							0226		1					IIIB
			CULG							0240	0243	1					IIIGG

SOLAR RADIO EMISSION
SPECTRAL OBSERVATIONS

DECEMBER 1972

DEC 1972	TIMES OF OBSERVATION		STATION	EVENTS												SPECTRAL TYPE
				CENTIMETRIC BAND			DECIMETRIC BAND			METRIC BAND			DEKAMETRIC BAND			
	START UT	END UT		START UT	END UT	INT.	START UT	END UT	INT.	START UT	END UT	INT.	START UT	END UT	INT.	
14			CULG							0352		1				IIIB
			CULG							0359.5	0403	1				IIIG
			CULG							0407	0409					IIIG,W
	-		CULG							0533	0533.5					IIIG,W
			CULG							0549.5						IIIB,W
			CULG							0554		1				IIIB
			CULG							0615.5	0617	1				IIIG
	0749	1447	WEIS							1331.5	1331.6	1				UNCLAS
	1400	2400	BOUL							1434.3	1435.0	1				III
	1401	2336	HARV							1555		3	1555		3	IIIG
			BOUL							1555.0	1555.4	2				IIIG
	1211	2105	SGMR										1555.0	1555.3	1	III
			BOUL							1712.3	1712.8	1				IIIG
			BOUL							1924.8	1924.9	1				III
	2027	2400	CULG				2159.5	2200	1	2159.5	2200.5	1				IIIG
			HARV				2252	2254	2	2253	2254	2				IIIG
			CULG				2253	2253.5	1	2253	2253.5	1				IIIG
15	0000	0727	CULG							0542.5	0546.5	1				IIIG,V
			CULG				0544		1	0544		1				IIIB
			CULG							0545	0620	1				II
	0749	1417	WEIS													
	1212	2105	SGMR													
	1400	1721	BOUL													
	1424	1448	WEIS													
	2028	2400	CULG				2028	2400								IS,W
			CULG							2038	2040	1				IIIG
	1416	2337	HARV				2057	2058	1	2057	2100	2				IIIGG,U
			CULG				2057.5	2059	1	2057.5	2059	1				IIIGG,U
	1945	2322	BOUL							2058.3	2058.6	1				III
			CULG				2059.5	2100	1	2059.5	2100	1				IIIG
			CULG							2107.5	2400					IIIS,W
			CULG							2115.5	2116	1				IIIG,U
16	0000	0727	CULG				0000	0727								IS,W
			CULG							0002	0546.5					IIIS,W
			CULG							0006.5	0007.5	1				IIIG
			CULG							0343	0410	2				II
			CULG				0343.5	0345.5	1	0344.5	0348	3	0344.5	0346	2	IIIG,V
			CULG										0345	0425	1	
			CULG				0346	0445	2	0348	0445	2				IV
			CULG							0348.5	0352.5	1	0349.5	0352	1	IIIG,RS
			CULG							0422	0423.5	1				UNCLF
			CULG							0430	0431	1				UNCLF
			CULG							0436.5	0437.5	1				UNCLF
	0749	1449	WEIS													
	1213	2106	SGMR													
	1417	2337	HARV							1648	2045	1				IN
			HARV							1827		3	1827		3	IIIG
	1400	2400	BOUL							1827.1	1827.3	1	1827.1	1827.3	1	III
			HARV							1833	1834	3	1833	1834	3	IIIG
			BOUL							1833.2	1833.5	1	1833.2	1833.5	1	III
			HARV				1909	2319	1							IN
			HARV							1917	1920	1	1918	1920	2	IIIGG
			BOUL							1919.3	1919.7	1	1919.3	1919.7	1	III
			HARV							1924	1927	1				IIIG
	2028	2400	CULG				2028	2400	1	2059	2400	1				IS
			HARV							2045	2333	1				I
			CULG							2203	2342.5	1				IIIN
			CULG							2234.5	2236	1				IIIGG
			HARV							2235	2236	2				IIIGG
			BOUL							2244.8	2245.7	1	2244.8	2245.7	1	III
17	0000	0728	CULG							0025	0649.5	1				IIIN
			CULG							0327	0328.5	1				IIIG
			CULG				0420	0510	1							IS
			CULG							0553	0555	1				IIIG
			CULG							0556	0558.5	2				IIIG,U
			CULG							0600	0602.5	1				IIIG
			CULG				0614.5	0616.5	1	0614.5	0617.5	1				I
			CULG				0700	0728	1							IS
			CULG							0726.5	0727.5	1				IIIG
	0752	1450	WEIS							1212.3	1214.9	2				IIIG
	1213	2106	SGMR													
	1416	2337	HARV							1416	1700	1				I
			HARV				1436	1843	1							IN
			HARV				1444	1445	1							IIIG,RS
			HARV							1700	1852	1				IN
			HARV				1949	2230	1	1943	2331	1				IN
	1400	2400	BOUL							1950.7	1950.8	1				III
	2029	2100	CULG				2029	2100	1							IS
	2112	2400	CULG				2112	2400	1							IS
			CULG				2154.5	2155	1							IIIG
			CULG							2213.5	2214.5	1				IIIG
			BOUL							2213.8	2213.9	1				III
			CULG				2257	2257.5	1	2257	2257.5	1				IIIG,U
			BOUL							2257.1	2257.3	1	2257.1	2257.3	1	III
			CULG							2332.5		1				IIIB
18	0000	0729	CULG				0000	0729	1							IS

SOLAR RADIO EMISSION
SPECTRAL OBSERVATIONS

DECEMBER 1972

DEC 1972	TIMES OF OBSERVATION		STATION	EVENTS												SPECTRAL TYPE
				CENTIMETRIC BAND			DECIMETRIC BAND			METRIC BAND			DEKAMETRIC BAND			
	START UT	END UT		START UT	END UT	INT.	START UT	END UT	INT.	START UT	END UT	INT.	START UT	END UT	INT.	
18			CULG							0106.5	0107	1				IIIG
			CULG							0251.5		1				IIIB
			CULG				0313.5	0314	1							IIIG
			CULG							0323		1				IIIB
			CULG							0341.5	0342	1				IIIB
			CULG							0348	0349	1				IIIG
			CULG							0418.5	0414.5	2	0411.5	0412	2	IIIGG,V
			CULG							0425.5						IIIB,W
			CULG							0440	0441	2				IIIG,U
			CULG							0507						IIIB,W
			CULG							0511.5	0512					IIIG,W
			CULG							0514	0518	1				IIIGG
			CULG							0520.5	0522.5	2	0521	0522	1	IIIGG
			CULG							0531.5	0532.5	1				IIIG
			CULG							0558	0559	1				IIIG
			CULG				0614.5	0618	1							FAST DRIFT
			CULG							0645.5		1				IIIB
	1214	2107	SGMR													
	0752	1402	WEIS							1440.5	1440.6	1				III
	1405	1451	WEIS							1442.1	1442.2	1				UNCLAS
	1520	2337	HARV				1520	1835	1	1520	1835	1				I
			HARV							1615		3	1615		3	IIIB
	1400	2400	BOUL							1615.0	1615.4	1	1615.0	1615.4	1	III
			BOUL							1631.5	1631.8	2	1631.5	1631.8	2	III
			HARV							1632		3	1632		3	IIIB
	2030	2400	CULG							2114.5		1				IIIB
			BOUL							2114.8	2114.9	1	2114.8	2114.9	1	III
			BOUL							2117.8	2117.9	1	2117.8	2117.9	1	III
			CULG							2118		1				IIIB
			BOUL							2126.9	2130.0	1	2126.9	2130.0	1	III
			CULG							2129.5		1				IIIB
			CULG				2134	2400	1							IS
			BOUL										2139.6	2139.7	1	III
			HARV							2153	2154	2	2153	2154	2	IIIG
			CULG							2153	2154	2				IIIG
			BOUL							2153.2	2154.2	2	2153.2	2154.2	2	III
			HARV				2203	2328	1	2203	2331	1				IN
19	0000	0729	CULG				0045	0231								IS,W
			CULG							0216		1				IIIB
			CULG				0223	0223.5	1	0222.5	0224.5	2	0222.5	0224	1	IIIGG,V
			CULG				0225.5	0227	1	0225.5	0226.5	1	0225.5	0226.5	1	IIIGG
			CULG				0401									IIIB,W
			CULG				0424.5									IIIB,W
			CULG				0531	0532								IIIG,W
			CULG				0617.5									IIIB,W
			CULG				0649									IIIB,W
	0748	1452	WEIS													
	1215	2107	SGMR													
	1419	2338	HARV													
	1400	2400	BOUL										1737.5	1738.5	1	III
			BOUL							1816.1	1816.3	1				III
			BOUL										1904.4	1909.6	1	III
			BOUL										1918.1	1919.0	1	III
	2030	2400	CULG							2208		1				IIIB
			CULG							2302		1				IIIB
			BOUL							2302.1	2302.3	1	2302.1	2302.3	1	III
20	0000	0729	CULG							0024	0121	1				IS
			CULG							0031.5	0032.5					IIIG,W
			CULG							0036	0037					IIIG,W
			CULG							0421	0427					IN,W
			CULG				0637.5	0729								IW
	0749	1452	WEIS													
	1215	2107	SGMR													
	1400	1819	BOUL													
	1416	2340	HARV							1416	1850	1				IN
			HARV				1653	2300	1							IN
			HARV							1850	2122	1				I
	2031	2400	CULG				2031	2400	1	2031	2400	1				IS
			CULG							2033	2400					IIIS,W
	2100	2400	BOUL													
			HARV							2122	2340	2				I
21			CULG							0000	0024					IIIS,W
	0000	0730	CULG				0000	0208	1	0000	0730	1				IS
	0705	1320	WEIS													
	1216	2108	SGMR													
	1334	1454	WEIS													
	1417	2348	HARV				1418	2337	1	1417	2337	1				IN
	1400	2400	BOUL							1605.6	1605.7	1	1605.6	1605.7	1	III
			BOUL							1608.6	1608.7	1	1608.6	1608.7	1	III
			BOUL										1622.7	1622.9	1	III
			BOUL										1641.7	1641.3	1	III
			BOUL										1643.6	1643.8	1	III
			BOUL										1644.4	1644.6	1	III
			BOUL										1648.8	1649.7	1	III
			BOUL										1651.9	1652.2	1	III
	2031	2400	CULG				2031	2400	1	2031	2400	1				IS
			BOUL										2354.6	2354.8	1	III

SOLAR RADIO EMISSION
SPECTRAL OBSERVATIONS

DECEMBER 1972

DEC 1972	TIMES OF OBSERVATION		STATION	EVENTS														SPECTRAL TYPE
				CENTIMETRIC BAND			DECIMETRIC BAND			METRIC BAND			DEKAMETRIC BAND					
	START UT	END UT		START UT	END UT	INT.	START UT	END UT	INT.	START UT	END UT	INT.	START UT	END UT	INT.			
22	0000	0730	CULG				0000	0730		0000	0200							IS,W
			CULG							0635	0638							IW
	1217	2109	SGMR															
	0753	1454	WEIS				1321.3	1321.6	1									IIIG
	1400	2400	BOUL															
	1416	2340	HARV							1416	2340	1						I
	2234	2400	CULG				2234	2400	1	2234	2400	1						IS
			CULG							2337.5								IIIB,W
23	0000	0731	CULG				0000	0731	1	0000	0731	1						IS
			CULG							0132.5	0133.5							IIIG,W
			CULG							0317								IIIB,W
			CULG							0353.5								IIIB,W
			CULG							0356								IIIB,W
			CULG							0456	0456.5	1						IIIG
			CULG							0556	0702							IIIN,W
			CULG							0705	0705.5	1						IIIG
	0753	1454	WEIS															
	1217	2109	SGMR															
	1417	2340	HARV							1418	2335	1						IN
	1400	2400	BOUL							1544.4	1545.0	1	1544.4	1545.0	1			IIIG
			BOUL							1545.0	1946.2	1	1545.0	1946.2	1			CONT
			HARV							1634	1958	1	1634	1958	1			IIIN
			HARV				1909	2339	1									IN
			BOUL										1957.2	1957.3	1			III
			BOUL							2002.2	2002.5	1	2002.2	2002.5	1			III
			BOUL										2003.8	2011.3	1			IIIGG
	2031	2400	CULG				2031	2200	1	2031	2140	1						IS
			CULG							2037	2400							IIIN,W
			BOUL										2042.7	2043.2	1			IIIG
			BOUL										2045.4	2045.9	1			IIIG
			BOUL							2106.9	2108.0	2	2106.9	2108.0	2			IIIG
			BOUL										2114.4	2117.3	1			IIIG
			BOUL							2132.4	2132.8	1	2132.4	2132.8	1			IIIG
			CULG				2200	2400										IW
			BOUL							2228.1	2228.3	2	2228.1	2228.3	2			III
			CULG				2334	2335.5	1									FAST DRIFT
			HARV				2339	2340	1									IIIGG
24	0000	0732	CULG				0000	0551										IN,W
			CULG							0000	0732							IIIN,W
			CULG							0431.5		1						IIIB
			CULG							0447	0600	1						IN
	0753	1245	WEIS															
	1216	2110	SGMR															
	1417	2341	HARV							1417	1946	1						IN
	1400	2400	BOUL							1456.4	1456.9	1	1456.4	1456.9	1			III
			BOUL							1528.0	2131.7	1	1528.0	2131.7	1			CONT
			HARV							1853	1952	1	1853	1952	1			IIIN
			HARV							1946	2208	1						I
	2032	2400	CULG				2032	2400	1	2032	2400	1						IS
			CULG							2032	2400							IIIS,W
			BOUL							2143.6	2145.1	1	2143.6	2145.1	1			IIIG
			HARV							2208	2341	1						IN
			BOUL							2209.0	2209.9	1	2209.0	2209.9	1			IIIG
			BOUL										2224.8	2225.2	1			IIIG
			BOUL							2239.5	2240.0	1	2239.5	2240.0	1			III
25	0000	0732	CULG				0000	0732	1	0000	0732							IS,W
			CULG							0000	0732							IIIN,W
			CULG				0420.5	0421	1									IIIG
			CULG				0602	0603	1	0602	0603	1						IIIG
	1123	1454	WEIS							1213.1	1213.2	1						IIIB
			WEIS							1221.4	1221.9	2						IIIG
			WEIS							1224.4	1244.5	1						III
	1416	2342	HARV							1417	1628	1						IN
			HARV				1454	2337	1									IN
	1400	2400	BOUL							1543.7	1544.9	1	1543.7	1544.9	1			IIIG
			HARV							1628	1656	1						I
			BOUL							1630.2	1631.5	2	1630.2	1631.5	2			III
			HARV							1640	1641	3	1640	1641	3			IIIG,V
	1217	2110	SGMR										1640.3	1641.1	1			III
			BOUL										1650.0	1910.0	1			CONT
			HARV							1656	2337	1						IN
			HARV							1711	1919	1	1711	1919	1			IIIN
			BOUL							1912.6	1912.8	1	1912.6	1912.8	1			III
			BOUL							1918.5	1918.1	1	1918.5	1918.1	1			III
			BOUL							2002.5	2002.7	1	2002.5	2002.7	1			III
	2032	2400	CULG				2032	2400	1	2032	2400	1						IS
			CULG							2045.5	2257							IIIN,W
			BOUL										2106.4	2106.7	1			III
			CULG							2145.5	2146	1						IIIG
			BOUL							2146.0	2146.2	1	2146.0	2146.2	1			III
			BOUL							2146.5	2159.2	1	2146.5	2159.2	1			IIIGG
			BOUL										2204.7	2205.1	1			IIIG
			BOUL							2220.9	2221.1	1	2220.9	2221.1	1			III
			BOUL										2257.9	2258.2	1			III
			CULG							2319	2320	1						UNCLF
			CULG							2321.5	2322	1						UNCLF
26	0000	0733	CULG				0000	0733	1	0000	0733	1						IN

SOLAR RADIO EMISSION
SPECTRAL OBSERVATIONS

DECEMBER 1972

DEC 1972	TIMES OF OBSERVATION		STATION	EVENTS												SPECTRAL TYPE
				CENTIMETRIC BAND			DECIMETRIC BAND			METRIC BAND			DEKAMETRIC BAND			
	START UT	END UT		START UT	END UT	INT.	START UT	END UT	INT.	START UT	END UT	INT.	START UT	END UT	INT.	
26			CULG							0732	0733	1				IIIG,U
	0753	1455	WEIS							0847.5	0848.3	1				IIIG
	1218	2104	SGMR													
			WEIS							1311.8	1312.7	1				IIIG
			WEIS							1342.7	1343.6	1				IIIG
			WEIS							1349.3	1349.4	1				IIIB
	1417	2342	HARV							1417	1805	1				IN
			HARV							1614	1616	2	1614	1615	2	IIIG
	1438	2400	BOUL							1614.0	1619.2	2	1614.0	1619.2	2	IIIG
			HARV				1621	1624	1							I
			HARV				2015	2016	2							IIIGG
	2033	2400	CULG							2048.5						IIIB,W
			CULG							2058						IIIB,W
			CULG				2100	2400								IN,W
			HARV				2107	2131	1	2102	2133	1				IN
			CULG							2118		1				IIIB
27	0000	0733	CULG				0000	0733		0000	0100					IS,W
			CULG				0300.5		1	0300.5		1				IIIB
	1416	2343	HARV							1420	2337	1				IN
	0754		WEIS							1425.8	1426.1	2				IIIB
	1134	2120	SGMR										1426.0	1426.4	1	III
			HARV							1659	1702	2	1700	1701	2	IIIGG,V
	1430	2400	BOUL							1700.5	1701.7	2	1700.5	1701.7	2	III
	2033	2400	CULG							2033.5	2037.5	1				IIIGG
			CULG				2110	2400	1	2110	2400	1				IN
			CULG				2153	2153.5		2153	2153.5					IIIG,W
28	0000	0125	CULG				0000	0125	1	0000	0125	1				IN
			CULG							0118		1				IIIB
	0215	0734	CULG				0215	0734		0215	0734					IS,W
	0754	0925	WEIS													
	1010	1457	WEIS													
	1147	2112	SGMR													
	1417	2344	HARV							1419	2339	1				IN
	2034	2400	CULG				2034	2400		2034	2400					IS,W
29	0000	0734	CULG				0000	0734		0000	0734					IS,W
			CULG				0138	0139		0138	0140.5					IIIG,W
			CULG							0236						IIIB,W
			CULG				0535			0535						IIIB,W
	0955	1456	WEIS													
	1200	2118	SGMR													
	1417	2345	HARV													
	2044	2400	BOUL													
	2034	2400	CULG							2244	2244.5					IIIG,W
			CULG				2250	2400								IS,W
30	0000	0735	CULG							0009.5						IIIB,W
			CULG							0045.5						IIIB,W
			CULG							0112.5						IIIB,W
	0756	1457	WEIS													
	1158	2114	SGMR													
	2035	2400	CULG				2112.5	2113.5	1	2112.5	2113.5	1				IIIG
	1438	2400	BOUL							2112.8	2113.6	1	2112.8	2113.6	1	III
			CULG							2140.5		1				IIIB
			BOUL							2141.1	2141.2	1				III
			CULG							2200	2400	1				IS
			CULG				2205	2206	1	2205	2206	1				IIIG,U,V
	1416	2346	HARV				2205	2206	1	2205	2206	3	2205	2206	3	IIIGG,V
			BOUL							2205.2	2205.7	2	2205.2	2205.7	2	III
			CULG							2317.5						IIIB,W
31	0000	0735	CULG							0000	0735	1				IS
			CULG							0014						IIIB,W
			CULG							0022	0022.5					IIIG,W
			CULG							0039.5	0041.5	1				IIIG
			CULG				0152		1	0152		1				IIIB
			CULG							0158						IIIB,W
			CULG							0209						IIIB,W
			CULG				0309.5	0310.5	1	0309.5	0310.5	1				IIIG
			CULG							0427.5						IIIB,W
	0756	0836	WEIS													
	0841	1458	WEIS													
	1230	2117	SGMR													
	1417	2346	HARV							1426	2343	1				IN
			HARV				1553	1554	2	1553	1554	2				IIIGG
	1854	2400	BOUL													
	2039	2400	CULG							2035	2400	1				IS
			CULG				2231	2233	1	2231	2233	1				IIIG
			HARV							2232	2233	1				IIIG
			CULG				2317.5			2317.5						IIIB,W
			CULG				2320	2400	1							IN
																IIIB,W

The symbols used in connection with the spectral type in describing the important bursts are as follows:

B = Single burst
G = Small group (< 10) of bursts
GG = Large group (> 10) of bursts
C = Underlying continuum (particularly with type I)
S = Storm in the sense of intermittent but apparently connected activity
N = Intermittent activity in this period
U = U-shaped burst of Type III

RS = Reverse slope burst
DP = Drifting pairs
DC = Drifting Chains
H = Herringbone
W = Weak
P = Pulsations
CONT = Continuum
UNCLF = Unclassified activity

Note: At Culgoora the band 2000 - 8000 MHz was not operating between December 6 at 0450 UT and December 17 at 2127 UT.

SELECTED SOLAR EVENTS

DECEMBER 1972

Culgoora

UT Date DEC 1972	HELIOGRAPH EVENT							Spectral Type	REMARKS
	Start (UT)	End (UT)	Freq. (MHz)	Positions: Central Dist. ($R_\odot$)	Positions: Position Angle (Deg.)	Polarization	Intensity (1-3)		
12	0311.5	0312.5	160	.1	70	0	1	III G	Similar at 0321
	0456	0457	80	.2	20	0	1	III G	and 0358
13	0101	0103)	160	.4	330	0	2	III GG	
	0330	0333)		.5	300	0	2	III GG	
16	0006.5	0007	80	1.1	290	0	1	III G	
	0341	0400	(80	0.9	250)	0	2-3	IIIG V/IVs	Complex source structure
			(160	0.7	250)				IVs Polarized ℓ
17	0327	0329	80	1.1	270	0	1	III G	
18	0348	0349	80	1.1	260	0	1	III G	
	0410	0414	(80	1.1	260)	0	3	III GG,V	
			(160	1.0	260)	0			
19	0222	0227	(80	1.2	240	0	2	III GG,V	
			(160	1.0	240	0			
30	2240	0500	(80	1.3	90	ℓ	(1	IV S	
			(160				(2		

Days without Heliograph observations: 1, 2, 3, 4, 5, 6, 7, 14, 15

COSMIC RAY INDICES

(Neutron Monitors)

DECEMBER 1972

Dec. 1972	CHURCHILL DAILY AVERAGE COUNTS PER HOUR	DEEP RIVER DAILY AVERAGE COUNTS PER HOUR	CALGARY DAILY AVERAGE COUNTS PER HOUR	SULPHUR MT. DAILY AVERAGE COUNTS PER HOUR	CLIMAX DAILY AVERAGE COUNTS PER HOUR	DALLAS DAILY AVERAGE COUNTS PER HOUR
1	data not available at time of publication	data not available at time of publication	11782.0	8825.1	data not available at time of publication	6327.1
2			11712.1	8813.7		6316.4
3			11810.6	8882.2		6342.8
4			11815.6	8902.4		6345.4
5			11842.6	8911.0		6346.3
6			11844.8	8916.4		6341.0
7			11842.7(23)	8911.1		6349.9
8			-- (0)	8825.9		6280.4
9			11714.7(19)	8818.3		6290.2
10			11770.9	8837.9		6304.0
11			11824.5	8890.0		6269.2
12			11856.8	8917.9		6293.8
13			11774.3	8854.0		
14			11711.6	8779.3		
15			11696.4	8745.4		
16			11614.4	8671.6		
17			11629.5	8707.6		
18			11685.3	8754.9		
19			11733.4	8796.4		
20			11813.0	8841.0		
21			11822.9	8844.3		
22			11844.0	8846.5		
23			11619.6	8657.4		
24			11623.5	8662.3		
25			11710.1	8692.8		
26			11739.7	8739.9		data for rest of month not available at time of publication
27			11816.2	8798.6		
28			11775.4	8762.4		
29			11786.1	8756.7		
30			11749.2	8762.5		
31			11800.0	8737.8		

( ) Number of hours for which data are available if less than 24 (or number of section hours if less than 40 for Climax).

Churchill and Dallas Super Neutron Monitors, Scaling Factors 120.

Deep River Super Neutron Monitor, Scaling Factor 300.

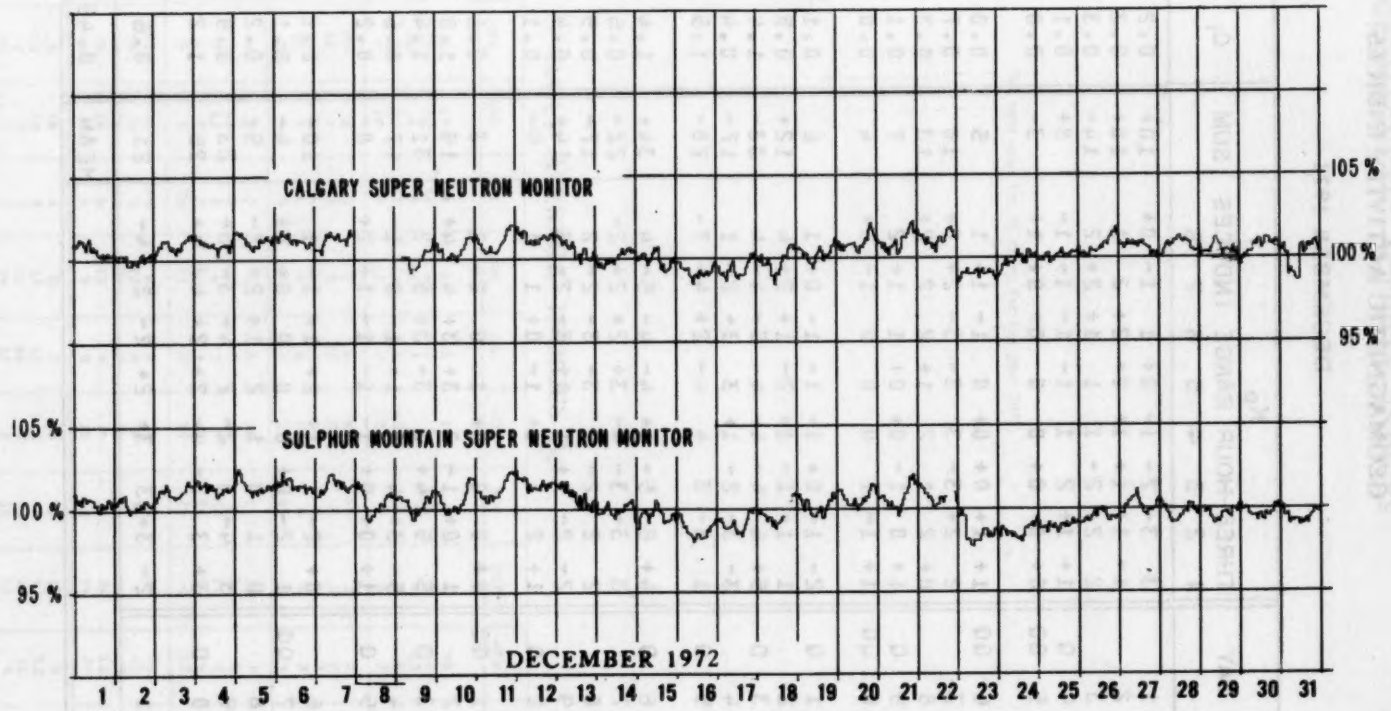
Calgary and Sulphur Mountain Super Neutron Monitors, Scaling Factors 100.

Climax IGC Station B305, Scaling Factor 100.

COSMIC RAY INDICES

(Pressure Corrected Hourly Totals)

DECEMBER 1972



GEOMAGNETIC ACTIVITY INDICES

DECEMBER 1972

DAY		K_p THREE-HOUR RANGE INDICES 1	2	3	4	5	6	7	8	SUM	C_i	C_p	A_p
1		3	3-	2-	1-	0+	1	1-	0+	10+	0.2	0.3	6
2		1-	1+	1+	1+	0+	2+	2	1	10+	0.3	0.2	5
3		2	2+	2-	1	1	1+	2+	2	14-	0.3	0.3	6
4	Q	1+	1+	2	1	1-	1-	1-	1-	8+	0.1	0.1	4
5	QQ	0+	0	0+	0	0	0+	0+	1+	3-	0.0	0.0	2
6	QQ	1+	1+	0+	0+	0	1-	1+	1	5	0.0	0.0	3
7		2	2+	3-	3	3-	3-	2+	0+	18	0.7	0.5	10
8		0+	2	1	2	1+	2	2	2+	13	0.3	0.3	6
9	Q	1+	0	1-	0+	0+	1	1+	2	7	0.1	0.1	4
10	QQ	1+	1-	1	0	0	0	1-	0+	4	0.0	0.0	2
11	Q	2-	1-	0+	1-	1-	1-	0+	1	6	0.1	0.1	3
12		1	1-	1-	1-	2-	1+	2+	4	12+	0.5	0.4	8
13	D	5+	4	4-	4-	4-	5-	4-	4	33-	1.4	1.3	30
14		3-	3-	2-	1+	3	3-	2-	1	17-	0.4	0.5	9
15	D	1	3-	3	4	4-	2+	4+	7-	28-	1.5	1.3	29
16	D	4+	5	5-	4+	4-	4-	5-	4	34+	1.4	1.3	33
17		3	3-	3-	4-	3+	2+	2+	2-	22-	0.6	0.7	13
18		2	2	2-	2	3-	3-	2-	2	17-	0.5	0.4	8
19		2-	2-	1+	1	1+	3-	2-	3	14+	0.4	0.4	7
20	Q	1+	2	1	1+	1-	0+	1	1	9-	0.1	0.1	4
21	QQ	0+	0	0	0+	1	0	0+	1	3	0.1	0.0	2
22		1	0+	1-	2	3+	3+	4	4+	19	1.0	0.8	14
23	D	5	5	4+	3	3-	3+	5	3	31+	1.4	1.3	30
24		5-	3+	4-	3-	1+	1-	0	1-	17	0.6	0.7	13
25	Q	1+	0+	0+	1-	1-	1-	1+	2+	8-	0.2	0.1	4
26		0+	2-	1	1+	2+	1+	1-	1	10-	0.1	0.2	5
27	QQ	1	2-	0+	0	0	0	0+	0+	4-	0.1	0.0	2
28		0	1	0	1	2	1+	2+	2-	9+	0.2	0.2	4
29		3	4-	3	2-	2	4-	3-	3+	23	0.9	0.8	15
30	D	3+	3	3-	4-	2+	2+	4+	4+	26	1.2	1.0	19
31		2-	3+	3	3+	2+	2-	2	4-	21	0.6	0.7	13
										MEAN	0.49	0.45	10

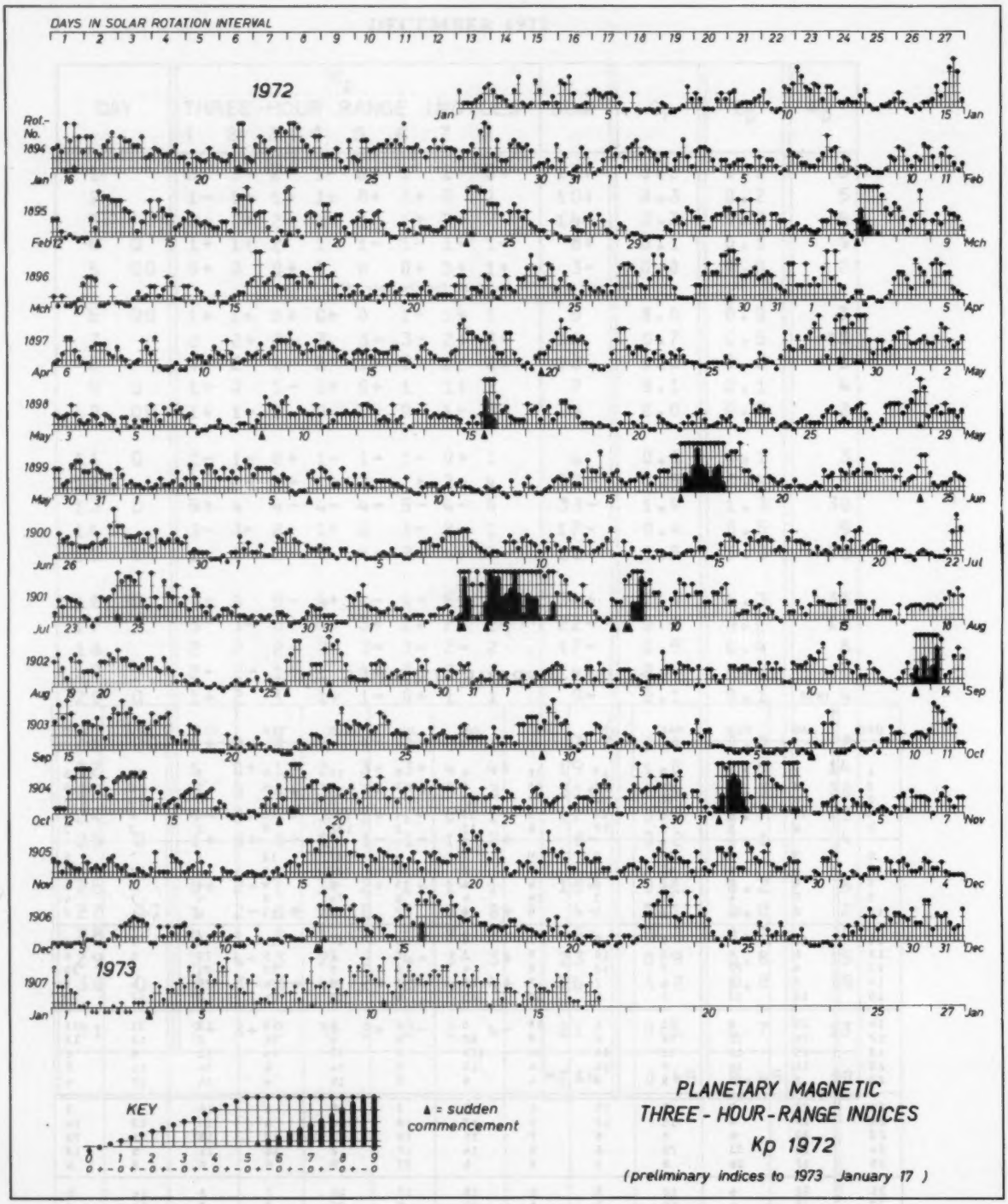
GEOMAGNETIC ACTIVITY INDICES

See next page for Kp chart for the year 1972.

DAILY AVERAGE INDICES Ap

1972

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	7	7	8	17	18	6	5	10	5	7	98	6
2	8	13	10	11	18	6	7	5	6	5	42	5
3	6	9	16	4	7	12	7	5	5	4	13	6
4	10	9	8	17	5	13	4	132	6	7	6	4
5	6	6	5	17	6	11	3	182	5	2	3	2
6	2	6	26	8	9	7	4	87	10	2	7	3
7	4	8	45	8	3	8	10	20	5	8	7	10
8	4	7	12	6	4	6	10	9	9	4	7	6
9	5	4	10	3	14	4	6	74	8	4	7	4
10	7	10	3	5	9	4	7	18	15	6	4	2
11	15	7	7	6	7	4	6	17	11	19	7	3
12	6	4	3	10	9	3	7	7	5	21	6	8
13	4	22	7	12	8	4	3	5	53	21	4	30
14	3	15	4	7	7	10	3	9	54	26	4	9
15	19	13	5	6	38	11	6	10	24	8	17	29
16	29	8	20	6	18	8	8	6	19	12	31	33
17	20	22	16	6	9	62	8	6	26	2	12	13
18	19	12	11	24	10	126	5	13	14	11	9	8
19	11	14	5	10	4	19	8	14	6	34	11	7
20	8	12	5	8	4	9	5	15	4	14	27	4
21	22	9	5	19	4	5	3	15	2	16	9	2
22	25	4	10	10	5	12	10	8	4	13	13	14
23	32	6	8	8	7	11	10	3	13	18	11	30
24	10	33	20	5	5	14	17	2	16	11	5	13
25	17	16	8	3	5	6	33	5	6	6	8	4
26	22	6	10	3	8	10	17	18	7	8	14	5
27	15	4	19	7	8	17	9	25	8	7	11	2
28	23	6	11	22	22	13	5	8	8	11	12	4
29	14	2	22	42	10	11	4	8	25	21	9	15
30	9		27	17	14	3	4	6	8	20	4	19
31	7		15		12		6	7		29		13
MEAN	13	10	12	11	10	14	8	24	13	12	14	10


DAYS IN SOLAR ROTATION INTERVAL
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27
1972
Rot.-No.
1894
1895
1896
1897
1898
1899
1900
1901
1902
1903
1904
1905
1906
1907
1973
KEY
0 1 2 3 4 5 6 7 8 9
0 + - 0 + - 0 + - 0 + - 0 + - 0 + - 0 + - 0 + - 0 + - 0
▲ = sudden commencement
PLANETARY MAGNETIC
THREE - HOUR - RANGE INDICES
Kp 1972
(preliminary indices to 1973 January 17)

R9	Rot.-No.	1st day	C9
876 886 578	19	J17	3 2 2 1 1 2 . . 1 1 3 2 2 5 2 3 3 . . . . . 3 2 1 3 2
767 888 777	70	F13	1 3 2 1 3 2 1 . . . . 3 . 2 2 4 5 4 4 4 3 6 7 8 7 . . 1 2 . . 1
645 767 777		M12	1 2 . . 1 . 1 1 . . . . . 4 5 4 4 7 . 1 3 3 2 5 2 2 5 . 2 1 .
887 556 677	1870	A 8	2 5 . 2 . . . . 4 6 5 5 5 7 7 4 4 4 3 3 . 2 5 3 2 3 1 3 . . . .
768 888 777	71	M5	3 . . . . . 4 . 3 3 . 3 . . 3 2 . 2 . . . 4 7 3 3 . 6 2 3 2 .
644 788 667	72	J1	6 2 3 2 . . 2 3 . . . . 2 2 3 2 3 6 2 5 4 . . . 3 6 2 . . 3 3 5
788 765 477	73	J28	2 . . 3 3 5 6 4 4 . 3 7 6 3 4 3 2 1 . 2 . . . 6 3 6 8 5 4 . 7 2
886 555 677	74	J25	8 5 4 . 7 2 4 . . . . . 2 3 6 5 2 2 2 . . 2 5 8 6 4 . . 1 2 . 2 4
777 777 755	75	A21	1 2 . 2 4 3 3 2 . 3 5 5 4 3 2 . . 3 . . . . 6 5 3 2 . 2 3 5 4 5 3
577 654 555	76	S17	2 3 5 4 5 3 . . 2 . 5 . 1 2 3 2 4 6 2 . . . . 4 4 2 . 2 . 6 6 6 3
665 677 655	77	D14	2 . 6 6 6 3 . . 5 6 4 . . . 4 3 2 . . . 2 . 2 3 7 2 2 4 5 2 2 . .
678 765 666	78	N10	4 5 2 2 . . . . 5 4 . 6 5 5 3 3 2 3 2 . . . . . 1 2 2 2 5 . . .
676 566 555	1879	D7	2 5 . . . . 7 4 . . . 2 2 . . 1 2 4 . . 2 5 3 3 . . 5 6 4 2 . . .
556 657 777	19	J3	6 4 2 . . . . 1 2 . . 1 2 2 2 1 4 3 6 3 2 1 3 3 . 6 6 4 6 4 4 2 . .
665 455 677	71	J30	6 4 4 2 . . . . 1 3 3 2 . . . 4 6 6 4 3 2 2 1 . 4 3 7 6 3 . . 2
665 345 544		F26	6 3 . . 2 4 . . . 4 . 4 . 4 5 6 6 5 4 2 . 4 3 . . 4 3 4 2 . . 2
444 444 777	1883	M25	3 4 2 . . 2 6 3 . 4 6 3 4 . . 7 6 6 3 2 6 6 4 2 3 2 . 5 4 3 . . 1
544 355 555	84	A21	5 4 3 . . . 2 5 2 . 4 2 2 2 7 6 4 3 3 . . 4 3 . 7 6 2 . . . 3
432 444 322	85	M18	6 2 . . 1 3 2 1 3 . . . 5 . 5 6 6 2 . . . 2 . . . 2 . . . 3 . .
233 467 654	86	J14	1 . . 3 . . . . 2 . 6 3 . 2 5 3 3 4 . 2 1 2 . 2 . . 2 2 2 2 1
456 775 553	87	J11	1 2 2 2 1 . . 2 . 5 2 2 . 4 2 . 1 2 2 1 4 . . 4 . . 3 3 3 4 3
454 467 522	88	A7	1 3 2 3 4 3 . . . 2 3 4 . . 2 2 3 2 1 3 . . . 6 3 . . 2 4 3 5 3
352 355 534	89	S3	1 2 4 3 5 3 2 . . 2 4 2 2 3 3 7 2 4 . . . 6 5 6 2 . 5 5 5 5 3 4
542 332 456	1890	S30	5 5 5 5 3 4 5 4 5 6 2 3 2 4 2 2 . . . . . 2 . 3 . . 4 6 4 . .
555 543 235	91	D27	. 4 6 4 . . . . . 1 . 2 2 . 1 4 2 . . . . . 2 . . 3 6 7 6 7 5 2 3
676 456 667	92	N23	7 6 7 5 2 3 . . . 1 3 2 . . . 2 . . 2 4 . . 2 7 5 3 . . 3 5 3 . .
665 444 423	1893	D20	. 3 5 3 . . 3 . . 4 4 2 2 2 3 . . . . . 4 . . 5 6 5 5 3 2 5
457 664 344	19	J16	6 5 5 3 2 5 6 6 3 4 5 4 5 4 2 1 2 4 2 2 1 2 1 . 3 . . 5 4 3 2 5
578 876 655	72	F12	. 5 4 3 2 5 3 4 3 2 . . 6 4 . . . 2 3 4 2 . 6 7 3 3 . . . . .
577 775 333		M10	. . . . . 5 4 3 . . . 2 2 5 2 3 5 3 5 6 4 4 3 . 4 4 3 2 . . .
555 556 642	1897	A6	2 2 1 . . . 3 3 2 . . . 5 2 2 5 3 2 . . . 5 7 4 5 5 2 . . 2 . .
356 777 544	98	M3	2 . . 2 . . 4 2 2 2 2 . 6 5 2 2 . . . 2 . . 2 2 5 2 4 3 . 1 3 4
677 546 665	99	M30	4 3 . 1 3 4 3 . 2 . . . . . 2 3 3 7 8 5 2 . 3 3 4 . 2 4 3 3 . 1
556 655 555	1900	J26	2 4 3 3 . 1 2 2 . . . 3 2 . 2 . . . 2 2 2 . 2 2 4 6 4 2 .
567 664 334	01	J23	2 4 6 4 2 . . . . . 8 8 7 5 2 7 5 4 . . . . 3 4 4 4 2 . .
455 875 543	02	A19	4 4 4 2 . . . 5 6 2 2 . . . . . 3 . 2 2 4 3 . 7 7 6 5 6 4 . .
435 555 542	03	S15	6 5 6 4 . . . . 4 4 . 2 2 2 6 2 . . . . . 2 . . . 5 5 5 6 2 3 .
123 566 641	04	D12	5 5 6 2 3 . 3 6 4 4 4 5 3 . 2 2 3 5 5 6 8 7 6 . . 2 2 1 2 . 2 1 .
122 245 432	05	N8	1 2 . 2 1 . . 4 6 3 2 3 6 2 4 3 . 2 4 3 3 2 . . . . . 2 . . .
235 545 422	1906	D5	. . 2 . . . . 2 6 2 6 6 3 2 2 . . 4 6 3 . . . 4 5 3 3 . . 3 5 5
	19	J1	3 . . 3 5 5 2 4 4 6 5 5 4 2 3 3
	73	J28	preliminary
		F24	

Symbol	.	1	2	3	4	5	6	7	8	9
$\bar{R}$ =	0	1-15	16-30	31-45	46-60	61-80	81-100	101-130	131-170	171...
R9,C9=	0	1	2	3	4	5	6	7	8	9
Cp =	a0-a1	a2-a3	a4-a5	a6-a7	a8-a9	1.0-1.1	1.2-1.4	1.5-1.8	1.9	2.0-2.5

DAILY GEOMAGNETIC CHARACTER FIGURES C9 AND 3-DAY MEAN SUNSPOT NUMBERS R9

For explanation and previous years see J. Bartels, Abhandlungen der Akademie der Wissenschaften zu Göttingen, Beiträge zum I.G.J., Heft 3 (1958) (may be requested from Institut für Geophysik, Postfach 876, 34 Göttingen, Germany).

PRINCIPAL MAGNETIC STORMS

DECEMBER 1972

DATE 1972 MO DA	STORM TIME UT START	STORM TIME UT END MO DA HR	OBS	GEO-MAG LAT.	SUDDEN COMMENCEMENT TYPE	AMPLITUDES D(')	AMPLITUDES H(γ)	AMPLITUDES Z(γ)	C FIGURE DEGREE OF ACTIVITY	MAXIMAL ACTIVITY ON K-SCALE 0 TO 9 MO DA	3-HOUR PERIOD	K INDEX	RANGES D (')	RANGES H (γ)	RANGES Z (γ)	STORM NUMBERS
12 07	0200	12 07 24	HYDE	7.6N	..	..	..	..	M	12 07	3,4,6	4	2	63	11	54
12 12	16--	-- -- --	COLL	64.6N	..	..	..	..		-- --	-	-	--	--	--	55
	2145	12 14 02	COLL	64.6N	SC *	- 5	+ 8	+ 4	MS	12 13	4,5	6	104	1100	560	55
	2142	12 14 09	NEWP	55.1N	..	..	..	..	M	12 13	2,3,4	5	28	104	102	55
	2145	12 14 10	BOUL	49.0N	..	..	..	..	M	12 13	2,4	5	21	105	35	55
	20--	12 14 20	IRKU	40.8N	..	..	..	..	M	12 13	6	6	18	116	35	55
	20--	12 14 02	TUCS	40.4N	..	..	..	..	M	12 13	3,4,8	5	10	120	5	55
	2145	12 13 24	ALIB	9.5N	SC	- 0.1	+ 9	- 1	M	12 13	1,2,6	5	3	111	23	55
	0530	12 13 24	HYDE	7.6N	..	..	..	..	M	12 13	6	5	3	131	18	55
	2145	12 13 24	ANNA	1.5N	SC	- 0.5	+11	+ 5	M	-- --	-	-	3	123	56	55
	2145	12 13 24	TVAN	1.1S	SC	0.0	+ 9	+12	M	-- --	-	-	2	151	82	55
	2145	12 14 00	PMOR	18.6S	SC	- 0.4	+11	+ 8	M	12 12	8	5	7	110	50	55
										12 13	1	5				55
	21--	12 14 01	HRMN	33.3S	..	..	..	..	M	12 13	1,6	5	23	114	108	55
	2145	12 14 00	GNAN	43.2S	SC *	+ 1 *	+ 6	+ 6 *	M	12 13	1	5	--	80	110	55
	2146	12 14 12	TOOL	46.7S	SC	- 1.8	+ 7	0	M	12 13	2,6	5	20	75	48	55
	2002	12 17 14	KGLN	57.3S	SC	--	--	--	S	12 15	8	8	--	--	--	55
12 15	08--	12 17 03	COLL	64.6N	..	..	..	..	MS	12 15	5	6	153	1070	880	56
										12 16	4,5	6				56
	08--	12 17 15	SITK	60.0N	..	..	..	..	MS	12 16	4	6	60	300	360	56
	05--	12 17 18	NEWP	55.1N	..	..	..	..	M	12 15	4	5	28	117	127	56
										12 16	2					56
	19--	12 17 01	FRED	49.6N	..	..	..	..	M	12 15	4	5	23	120	47	56
										12 16	6					56
	08--	12 17 20	IRKU	40.8N	..	..	..	..	M	12 15	8	6	26	95	37	56
	08--	12 17 14	TUCS	40.4N	..	..	..	..	MS	12 15	8	6	13	140	10	56
	03--	12 17 15	HONO	21.1N	..	..	..	..	M	12 15	8	5	5	92	18	56
	0300	12 16 20	HYDE	7.6N	..	..	..	..	M	12 15	5	5	5	116	20	56
	20--	12 16 24	HRMN	33.3S	..	..	..	..	MS	12 15	8	6	22	96	75	56
	02--	12 17 21	GNAN	43.2S	..	..	..	..	M	12 15	8	5	13	80	110	56
	0200	12 20 09	TOOL	46.7S	..	..	..	..	M	12 15	8	5	13	140	45	56
12 22	10--	12 24 11	TUCS	40.4N	..	..	..	..	M	12 23	1	5	8	80	10	57
	0920	12 24 08	HYDE	7.6N	..	..	..	..	M	12 22	7	5	3	106	18	57
	04--	12 24 12	GNAN	43.2S	..	..	..	..	M	12 22	8	5	13	80	120	57
										12 23	1	5				57
	10--	12 24 14	KGLN	57.3S	..	..	..	..	MS	12 23	7	7	--	--	--	57
12 23	09--	12 24 03	HRMN	33.3S	..	..	..	..	M	12 23	7	5	23	81	98	57
12 28	1900	12 31 14	HYDE	7.6N	..	..	..	..	M	12 29	6	5	2	94	18	58

Reports were received from the following observatories:

College Sitka Newport Fredericksburg Boulder Irkutsk Tucson San Juan Honolulu Alibag Hyderabad Guam Annamalainagar Trivandrum Apia Port Moresby Hermanus Gnangara Toolangi Port-aux-Franais

SUDDEN COMMENCEMENTS AND SOLAR FLARE EFFECTS

DECEMBER 1972

PRELIMINARY REPORT ON RAPID MAGNETIC VARIATIONS (by Dr. A. Romana)

The meaning of the station symbols is given in the IAGA-Bulletins nr. 12 and 32. Times of ssc, si and bay-commencements are mean values. If given by ten or more stations they are underlined.

Sudden commencements followed by a magnetic storm or a period of storminess (ssc)

12 2145 B: ES MA CI PM HU PP LM DU; C: WN WI VI AQ EB KA (si: B: FU)

Sudden impulses found in the magnetograms (si)

07 1747 A: LG; B: ES WN EB; C: KA (ssc: A: HU; B: LM - bs: A: KS - bp: B: MA FU; C: TL)

12 2352 B: PM HU PP; C: TL (ssc: B: LM - bp: B: MA - bps: C: NI)

Rapid variations in form of bays (b, bs, bp, bps)

12 2001 bp: A: WN; B: MA IK; C: EB - bps: A: NU FU; B: WI; C: NI (ssc: A: SO B: LG LM KG; C: DB TL?)

15 2124 bs: A: KS - bp: A: MA AQ EB - bps: A: WN DB IK TL LM (si: A: LG)

23 1853 bp: A: SO MA FU AQ EB LM; B: KG - bps: A: WN DB IK TL; B: NI (si: A: LG)

30 2017 bp: A: FU; B: WN MA IK EB TL LM KG - bps: B: NI

Giant pulsations (pg)

13 0644 - 0827 MA

Solar-flare effects (sfe)

Effects confirmed by ionospheric or solar observations are underlined.

24 0958 - 1010 NI

RADIO PROPAGATION QUALITY FIGURES AND FORECASTS

North Atlantic — DECEMBER 1972

DEC 1972	WHOLE DAY INDICES NORTH ATLANTIC	ADVANCE FORECASTS (JC-REPORTS) FOR WHOLE DAY	NORTH ATLANTIC 6-HOURLY QUALITY FIGURES 00 TO 06	06 TO 12	12 TO 18	18 TO 24	SHORT-TERM FORECASTS ISSUED ABOUT ONE HOUR IN ADVANCE OF 02	08	14	20	GEOMAGNETIC INDICES K_{FR} HALF DAY (1)	(2)	A_{FR} OBSERVED
01	6o	6	6-	6-	7-	6+	6	6	6	7	1	0	2
02	6+	6	6+	7-	6o	6+	6	6	6	6	1	1	3
03	6+	6	6o	6o	6+	6+	6	6	6	6	2	2	5
04	7-	6	6+	7-	7-	7-	6	6	5	7	2	0	3
05	7-	6	7-	7-	6o	7o	6	6	5	7	0	1	1
06	6+	6	6+	6+	6+	6+	6	6	6	7	0	1	1
07	7-	6	6o	7-	7o	6+	6	6	6	6	3	2	11
08	6+	6	6+	6o	7-	6+	6	5	6	7	2	1	5
09	6+	6	6o	6o	7-	6+	6	6	6	6	1	1	2
10	6+	6	7-	6o	6+	6+	6	6	6	6	1	0	2
11	6o	6	6+	5+	6+	6+	6	6	6	7	1	0	2
12	6+	6	6+	6+	6+	6+	6	6	6	7	1	2	6
13	6+	6	6o	6+	7-	6+	6	5	5	5	(4)	(4)	25
14	7-	5	6o	6+	7o	7o	5	5	5	5	2	2	8
15	6+	5	7-	6o	7-	6-	6	5	5	6	3	3	17
16	6-	6	5o	6-	6+	6-	5	4	5	5	(4)	3	24
17	6-	6	5+	6o	6o	6-	5	5	5	5	3	2	10
18	6o	6	6-	6+	6o	6o	5	5	6	6	2	2	6
19	6+	6	6+	7-	6+	6+	6	6	6	6	2	2	6
20	6+	6	6+	6o	7-	6o	6	6	6	7	2	1	5
21	6o	6	6o	6o	6+	6o	6	6	6	7	0	1	1
22	6+	6	7-	6o	6+	6o	7	6	6	6	1	3	9
23	6+	6	6+	7-	7-	6o	5	5	5	5	(4)	3	19
24	6o	6	6+	7-	6-	6o	5	5	5	5	3	1	10
25	6+	6	6o	6o	7-	7-	5	6	6	6	1	1	3
26	6+	6	7-	7-	6o	6+	6	6	6	6	1	1	3
27	6+	6	6+	6+	7-	6o	6	5	6	7	1	0	1
28	7-	7	7-	7-	7-	7-	7	6	6	6	1	1	2
29	7-	7	7-	6+	7-	6+	6	5	5	6	2	2	9
30	6+	7	7-	6o	7-	6-	5	5	5	5	3	3	15
31	6+	6	6o	6o	7-	6+	5	5	5	5	3	2	12

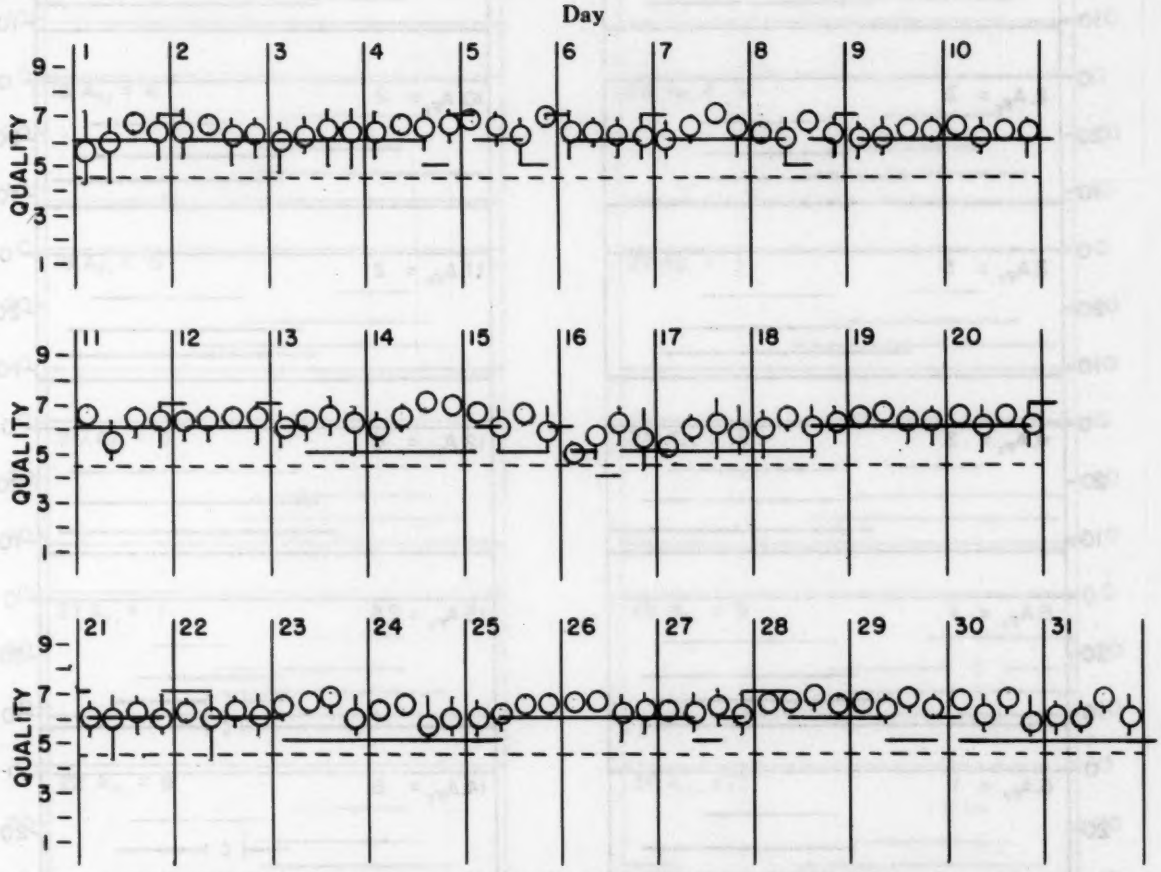
RADIO PROPAGATION QUALITY FIGURES AND FORECASTS

DECEMBER 1972

North Atlantic

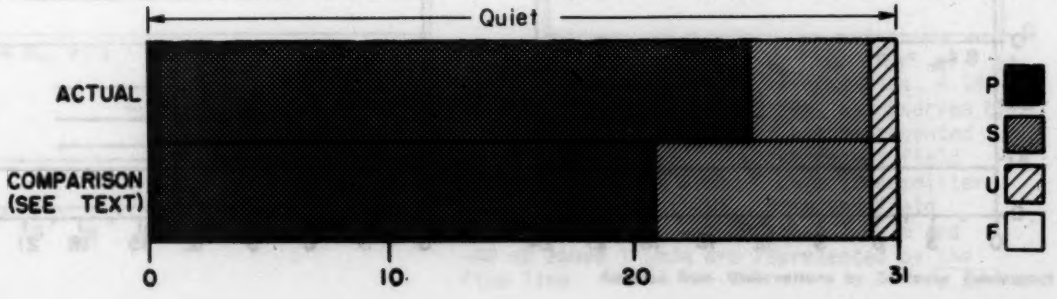
– Short term forecast
o Quality figure

1 range of reports



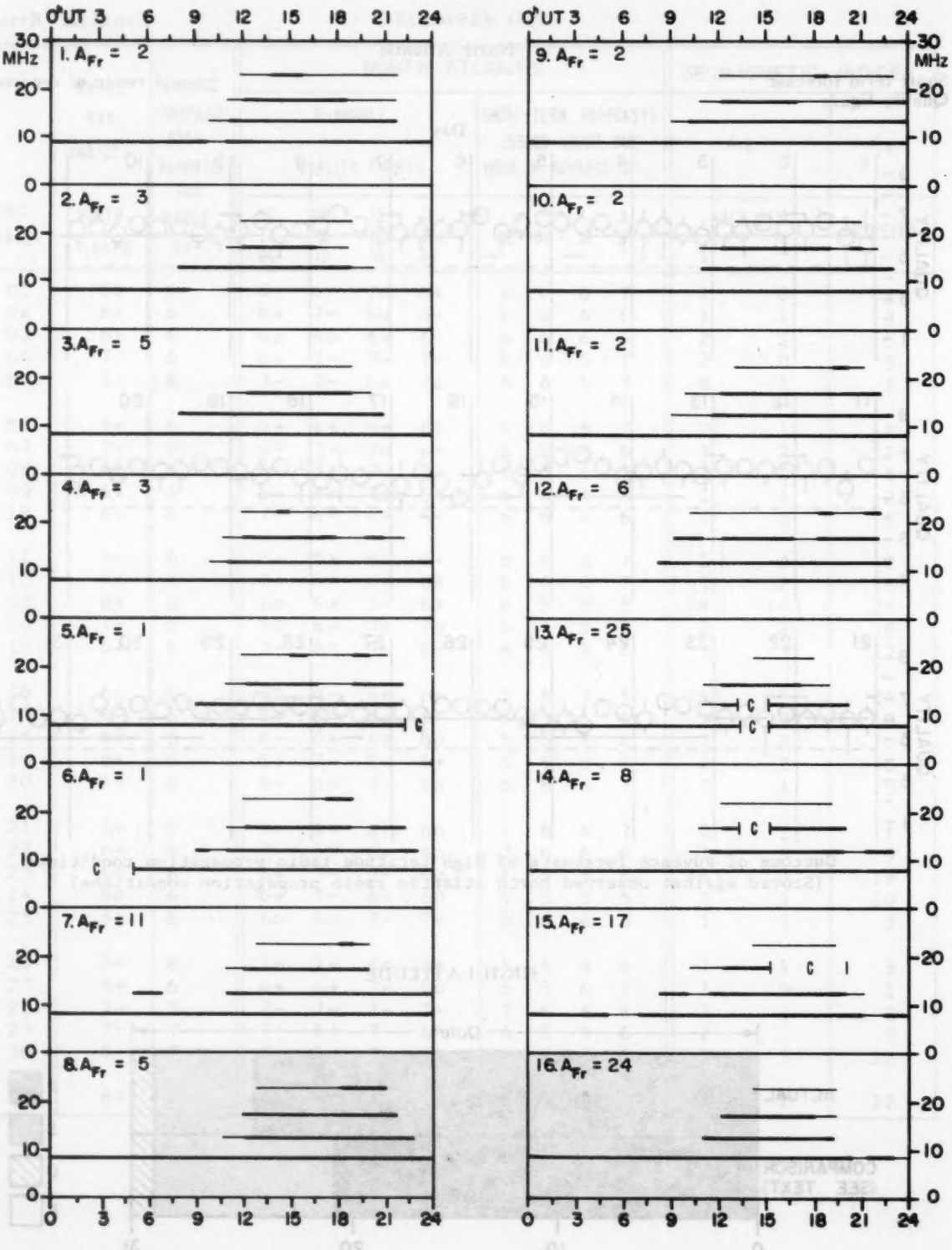
Outcome of advance forecasts of High Latitude radio propagation conditions
(Scored against observed North Atlantic radio propagation conditions)

HIGH LATITUDE



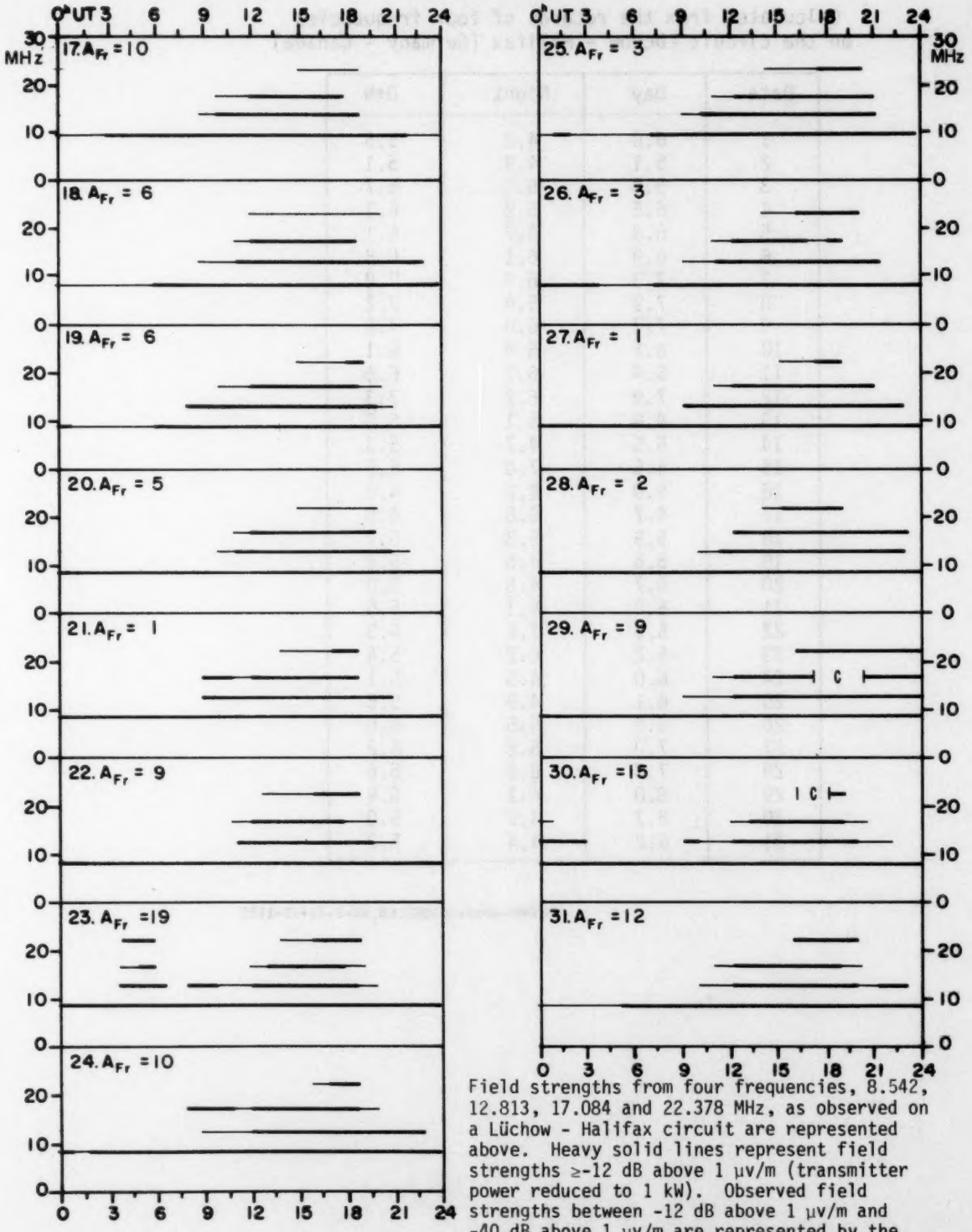
TRANSMISSION FREQUENCY RANGES -- NORTH ATLANTIC PATH

DECEMBER 1972



TRANSMISSION FREQUENCY RANGES -- NORTH ATLANTIC PATH

DECEMBER 1972



Field strengths from four frequencies, 8.542, 12.813, 17.084 and 22.378 MHz, as observed on a Lüchow - Halifax circuit are represented above. Heavy solid lines represent field strengths ≥-12 dB above 1 μv/m (transmitter power reduced to 1 kW). Observed field strengths between -12 dB above 1 μv/m and -40 dB above 1 μv/m are represented by the fine line. **Adapted from Observations by Deutsche Bundespost**

RADIO PROPAGATION QUALITY INDICES

DECEMBER 1972

Calculated from the records of four frequencies
on the circuit Lüchow - Halifax (Germany - Canada)

Date	Day	Night	D+N
1	6.0	4.2	5.5
2	5.1	4.9	5.1
3	5.8	5.0	5.7
4	6.5	5.2	6.1
5	6.8	4.7	6.1
6	6.9	6.1	6.6
7	7.3	6.3	7.0
8	7.9	5.9	7.2
9	7.7	6.0	7.0
10	6.2	5.9	6.1
11	6.4	6.7	6.6
12	7.9	6.2	7.3
13	4.8	5.1	5.0
14	5.5	4.7	5.3
15	4.5	7.0	5.6
16	5.0	4.2	4.8
17	4.7	3.8	4.5
18	5.9	5.3	5.7
19	5.6	4.5	5.3
20	5.7	4.5	5.0
21	6.2	5.1	5.5
22	5.6	7.6	6.3
23	5.2	6.2	5.4
24	6.0	4.5	5.1
25	6.1	4.9	5.5
26	6.0	5.5	5.6
27	7.0	5.8	6.2
28	7.3	6.6	6.6
29	8.0	6.2	6.9
30	5.7	4.2	5.0
31	6.2	4.4	5.2

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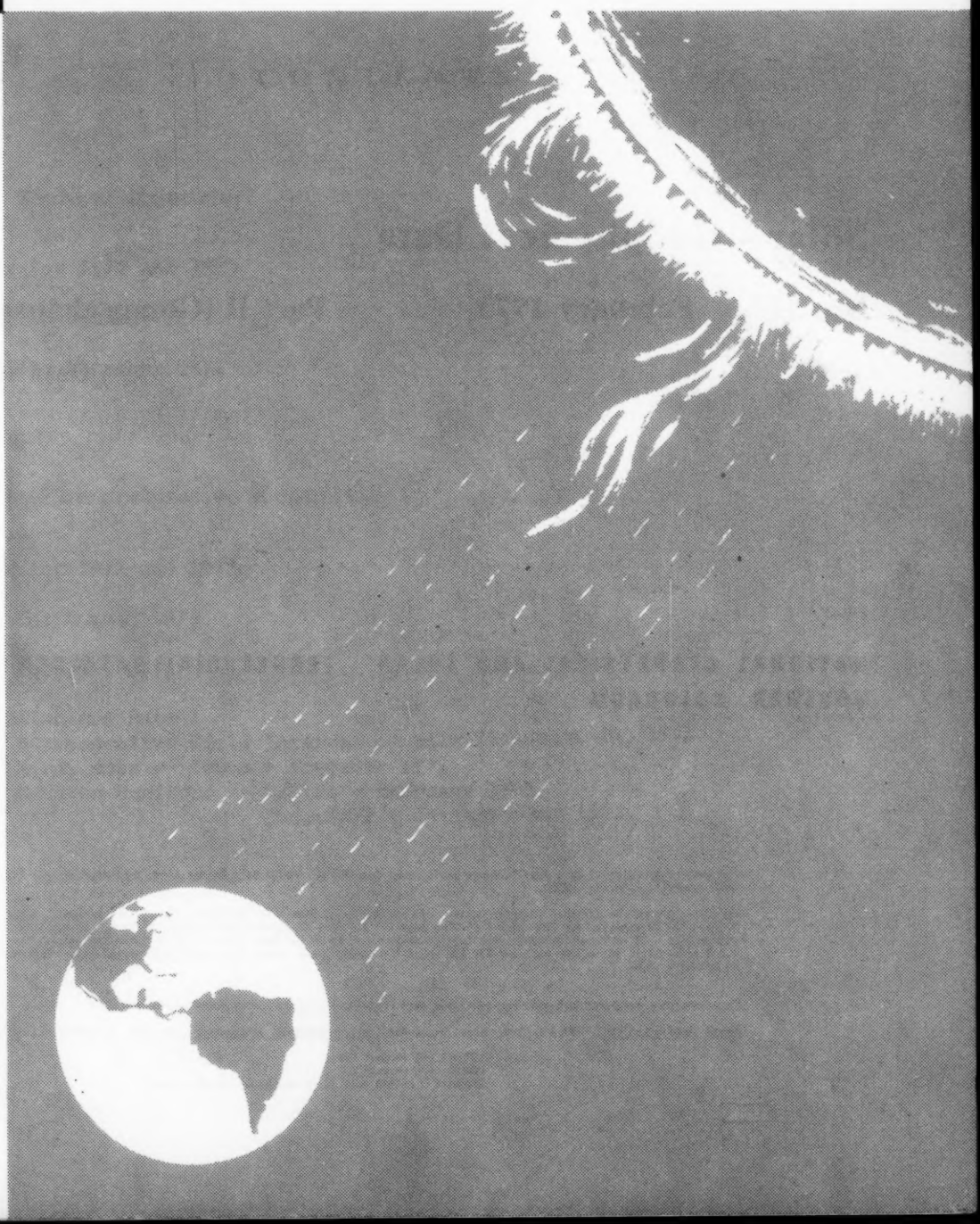
SOLAR-GEOPHYSICAL DATA
(comprehensive reports)

U. S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
Environmental Data Service

FEBRUARY 1973



NUMBER 342-PART II
DATA FOR
AUGUST 1972
JULY 1972
& MISCELLANEA

U.S. DEPARTMENT OF COMMERCE
Frederick B. Dent, Secretary
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
Robert M. White. Administrator
ENVIRONMENTAL DATA SERVICE
Thomas S. Austin, Director

Solar - Geophysical Data

No. 342 February 1973 Part II (Comprehensive Reports)

Data for: Aug 1972
Jul 1972
& Miscellanea

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* * * * *

To standardize referencing these reports in the open literature, the following format is recommended:

Solar-Geophysical Data, CRPL-FB 135*, pages, issue date, U.S. Department of Commerce, (Boulder, Colorado, U.S.A. 80302).

*CRPL-FB 135 through 269
IER-FB 270 through 298
299 Part I or 299 Part II to number of current issue.

SOLAR - GEOPHYSICAL DATA

No. 342

Issued in two parts

Hope I. Leighton, Editor

J. Virginia Lincoln, Director
Solar - Terrestrial Data Services Division

CONTENTS

Part I (Prompt Reports)

	Page
Index for 1972 and 1973	2
Data for January 1973	3-20
Data for December 1972	21-114

Part II (Comprehensive Reports)

Index for 1972 and 1973	2
Data for August 1972	3-95
Data for July 1972	97-105
Miscellaneous Data	107-111
Retrospective World Interval -- July 26-August 14, 1972	
X-ray maps -- OSO-5 - November 1972	
Neutron Monitors -- Dallas - February 1972	
Churchill - February-May 1972	

INDEX FOR 1972 - 1973 DATA PUBLISHED IN "SOLAR-GEOPHYSICAL DATA"

		1972 Aug	Sep	Oct	Nov	Dec	1973 Jan
A.	Solar and Interplanetary Phenomena						
A.1	Sunspot Drawings	338	339	340	341	342	
A.2a	Zürich Provisional Relative Sunspot Numbers R_Z	337	338	339	340	341	342
A.2b	Zürich Final Sunspot Numbers R_Z						
A.2c	American Relative Sunspot Numbers R_A'	337	338	339	340	341	342
A.3a	Mt. Wilson Magnetograms	338	339	340	341	342	
A.3b	Mt. Wilson Magnetic Characteristics of Sunspots	338	339	340	341	342	
A.4	Hα Spectroheliograms	338	339	340	341	342	
A.5	Calcium Plage Drawings - McMath (or Catania)	338	339	340	341	342	
A.5a	Calcium Plage (McMath) and Sunspot Regions	338	339	340	341	342	
A.5b	McMath Daily Calcium Plage Index	338	339	340	341	342	
A.7b	Coronal Line Emission	338	339	340	341	342	
A.7c	White-Light Corona (NRL OSO-7, 1971-083A)	338	339	340	341	342	
A.7d	Solar EUV Spectroheliogram Fe XV 284 Å (GSFC OSO-7, 1971-083A)	338	339	340	341	342	
A.7e	Solar XUV Coronograms (NRL OSO-7, 1971-083A)			340	341	342	
A.8aa	2800 MHz - Daily Values of Solar Flux (ARO-Ottawa)	337	338	339	340	341	342
A.8ac	2800 MHz - Daily Values of Adjusted Solar Flux (ARO-Ottawa)	337	338	339	340	341	342
A.8g	15400, 8800, 4995, 2695, 1415, 606, 410, 245 MHz Adj. Solar Flux (AFCRL)	337	338	339	340	341	342
A.9a	9.1 cm Radio Maps of the Sun (Stanford)	338	339	340	341	342	
A.9b	21 cm Radio Maps of the Sun (Fleurs)	338	339	340	341	342	
A.9c	8.6 mm Radio Maps of the Sun (Prospect Hill)	338	339	340	341	342	
A.10a	169 MHz - Interferometric Observations (Nançay)	337	338	340	340	341	
A.10c	21 cm East-West Solar Scans (Fleurs)	337	338	339	340	341	342
A.10d	43 cm East-West Solar Scans (Fleurs)	337	338	339	340	341	342
A.10e	10.7 cm East-West Solar Scans (Ottawa-ARO)	337	338	339	340	341	342
A.11aa	Solar X-ray Radiation (Explorer 37 or 44)	338	339	340	341	342	
A.11ab	Solar X-ray Radiation (Explorer 37 or 44) Graphs	342					
A.11e	Solar X-ray Spectroheliograms (OSO-5)	338	339	340	342		
A.11f	Solar X-ray Spectroheliograms (GSFC OSO-7, 1971-083A)					342	
A.12aa	Solar Protons (Explorer 41 or 43) Daily hourly values	342					
A.12ab	Solar Protons (Explorer 41 or 43) Graphs	342					
A.12ba	Cosmic Ray Protons (Pioneers 6 & 7)	337	---	339	340	---	342
A.12bb	Cosmic Ray Protons (Pioneers 8 & 9)	337	338	339	340	341	342
A.12c	Cosmic Ray Protons (ATS-1)	337					
A.13a	Solar Wind (Pioneers 6 & 7)	337	---	339	340	341	342
A.13c	Solar Wind (Vela 6B)						
A.17	Interplanetary Magnetic Field (Pioneer 8)	---	---	339	340	---	342
A.17	Interplanetary Magnetic Field (Pioneer 9)	337	338	339	340	341	342
A.18	Interplanetary Electric Field (Pioneer 8)	---	---	339	340	---	342
A.18	Interplanetary Electric Field (Pioneer 9)	337	338	339	340	341	342
B.	Ionospheric (and Radio Wave Propagation) Phenomena						
B.51ca	High Latitude Quality Figures and Forecasts	338	339	340	341	342	
B.51cb	High Latitude Comparison Graphs	338	339	340	341	342	
B.52	Graphs of Transmission Frequency Range	338	339	340	341	342	
B.53	Quality Figures based on Frequency Ranges	338	339	340	341	342	
C.	Flare-Associated Events						
C.1a	Optical Observations Flares	337	338	339	340	341	342
C.1ba	Optical Observations Flares (Including Standardized Data)	342					
C.1d	Flare Patrol Observations	337	338	339	340	341	342
C.1e	Flare Indices (by day)	342					
C.1f	Flare Index by Region						
C.3	Solar Radio Waves - Fixed Frequencies - Outstanding Occurrences	342					
	Solar Radio Waves - Fixed Frequencies - Selected	337	338	339	340	341	342
C.3t	43.25, 80 and 180 MHz Selected Bursts (Culgoora)	342					
C.4aa	10-2000 MHz - (Fort Davis)	338	339	340	341	342	
C.4b	7.6-80 MHz - (University of Colorado)	338	339	340	341	342	
C.4d	8-8000 MHz - (Culgoora)	338	339	340	341	342	
C.4e	30-1000 MHz - (Weissenau, G.F.R.)	338	339	340	341	342	
C.4f	24-48 MHz - (AFCRL, Sagamore Hill)	338	339	340	341	342	
C.5b	Solar X-ray Radiation (Explorer 35)	342					
C.5c	Solar X-ray Radiation (Explorer 44)	338	339	340	341	342	
C.6	Sudden Ionospheric Distrubances	338	339	340	341	342	
D.	Geomagnetic and Magnetospheric Phenomena						
D.1a	Geomagnetic Indices Ci, Cp, Kp, Ap - Selected Days	338	339	340	341	342	
D.1b	27-Day Chart of Kp Indices for Year	342	342	342	342	342	
D.1c	27-Day Chart of C9 for Year	342	342	342	342	342	
D.1d	Principal Magnetic Storms	338	339	340	341	342	
D.1e	Reduced Magnetograms	342					
D.1f	Sudden Commencement and Solar Flare Effects	338	339	340	341	342	
F.	Cosmic Rays						
F.1a	Cosmic Ray Neutron Counts (Deep River)						
F.1b	Cosmic Ray Neutron Counts (Climax)						
F.1c	Cosmic Ray Neutron Counts (Dallas)	338	339	340	341	342	
F.1d	Cosmic Ray Neutron Counts (Churchill)						
F.1e	Cosmic Ray Neutron Counts (Alert)						
F.1f	Cosmic Ray Neutron Counts (Calgary)	338	339	340	341	342	
F.1g	Cosmic Ray Neutron Counts (Sulphur Mountain)	338	339	340	341	342	
H.	Miscellaneous						
H.60	IUWDS Alert Decisions	337	338	339	340	341	342
H.62	Abbreviated Calendar Record						

AUGUST 1972 DATA

Contents

	Page
Solar Flares	
Confirmed Solar Flares	4-25
Flare Indices	25
Unconfirmed Solar Flares	26-33
No-Flare-Patrol Chart	34
Solar Radio Waves	
Worldwide Outstanding Occurrences at Fixed Frequencies	35-68
Selected Solar Noise Burst	69
Solar X-ray Radiation	
University of Iowa - Explorer 35 (not available at time of publication)	
Naval Research Laboratory - Explorer 44	70-85
Solar Proton Monitoring	86-91
Magnetograms of Geomagnetic Storm	92-95

For explanations of the data contained herein see "Descriptive Text" published as supplement to February 1973 "Solar-Geophysical Data" (Number 342).

SOLAR FLARES
Confirmed
AUGUST 1972

OBSERV-ATORY	OBSERVED UT				LOCATION					DURATION	IMPORTANCE	OBS.		MEASUREMENTS					REMARKS
	DATE 1972 AUG	START	END	MAX. PHASE	APPROX. LAT.	APPROX. MER. DIST.	CENTRAL DISTANCE	McMATH PLAGE REGION	CMP DAY	MIN.		COND.	TYPE	TIME UT	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH Hg	MAX. INT. %	
	01	0000	0001	NO FLARE PATROL															
	01	0059	0100	NO FLARE PATROL															
GRP45463	01	0141	0203	0146	N12	E49	.752	11976	4.7	22	--B				.54				2 2 2 3
CRON	01	0137	0203		N11	E49	.751	11976	4.7	26	-N	3	V		.55				
MITK	01	0144	0201D	0146	N13	E48	.741	11976	4.7	17D	-B		C	0146	.52	.80			D
GRP45465	01	0431	0452	0433	S20	E00	.435	11974	1.2	21	--N				.85				3 3 3 5
CRON	01	0428	0448	0433	S20	E01	.435	11974	1.3	20	-N	3	V		.60				
ATHN	01	0433E	0455	0433U	S20	W01	.435	11974	1.1	22D	-N	2	V		.50				DE
KODA	01	0433	0446D	0433	S21	E01	.451	11974	1.3	13D	-B		P	0435	1.44	1.40	1.68		E
7 STATIONS REPORTING GROUP 45467. 3 STATIONS OBSERVING AND NOT REPORTING.																			
GRP45467	01	0700	0747	0704	N13	E47	.730	11976	4.8	47	-N				1.72				6 6 6 10
BUCA	01	0645	0805		N15	E46	.720	11976	4.7	80	1N		P	0704	1.66	2.40			
CRON	01	0655	0733		N12	E47	.729	11976	4.8	38	-N	3	V		1.50				
CRON	01	0655	0733		N12	E47	.729	11976	4.8	38	-N	3	V		1.50				
ATHN	01	0658	0744D	0704	N13	E48	.741	11976	4.9	46D	-N	3	C		1.49				F
MONT	01	0659	0804	0703	N13	E49	.752	11976	5.0	65	-N		C	0703	2.27				
CANR	01	0701	0738		N11	E45	.704	11976	4.7	29	-B	2	V	0702	1.10	1.30			
CATA	01	0705	0830D	0705	N13	E47	.730	11976	4.8	85D	1B		P	0705	2.32	3.34		(219)	TZ
45467	01	0608	0759	(0612)	N13	E51	.774	11976	5.1	111	*-B				.40				2 1 1 8
CAPS	01	0608	0759D		N13	E51	.774	11976	5.1	111D	-B	2	P	0612	.40	.60		(265)	
CANR	01	0743E	0808D		N11	E45	.704	11976	4.7	17D	-B	2	V	0743	1.00	1.20			
GRP45468	01	0841	0903	0847	S19	W02	.420	11974	1.2	22	--N				.58				9 9 7 12
MONT	01	0839	0855	0841	S20	W01	.435	11974	1.3	16	-N		C	0841	1.13				
CATA	01	0849E	0918	0850	S20	W03	.437	11974	1.1	30D	-B		P	0850	.46	.52		(232)	
ISTA	01	0840	0857		S20	W02	.436	11974	1.2	17	-N								E
CAPS	01	0841E	0905D		S18	W01	.403	11974	1.3	24D	-B	3	S	0842	.50	.50		(243)	
ARCE	01	0842E	0852D		S19	E00	.419	11974	1.4	10D	-B		C	0842	.50	.50			H
CRON	01	0843E	0856		S20	W01	.435	11974	1.3	13D	-F	3	V		.50				
CRON	01	0843	0856		S20	W01	.435	11974	1.3	13	-F	3	V		.50				
ONDR	01	0844E	0859		S21	E01	.451	11974	1.4	15D	-N		V	0847			2.70		CD
ZURI	01	0851E	0909	0851	S19	W03	.422	11974	1.1	18D	-N		P	0851	.59	.68			
CANR	01	0851E	0915D		S17	W07	.404	11974	31.8	24D	-N	3	V	0851	.40	.40			
14 STATIONS REPORTING GROUP 45469. 0 STATIONS OBSERVING AND NOT REPORTING.																			
GRP45469	01	0858	1012	0925	N12	E46	.717	11976	4.8	74	1N				2.65				12 10 8 13
ISTA	01	0810	0950		N12	E46	.717	11976	4.8	100	-N								BEFL
ARCE	01	0832E	0852D		N13	E46	.718	11976	4.8	20D	-N		C	0842	.17	.20			
TEHR	01	0841	1101	0915	N14	E48	.742	11976	5.0	140	1B	3	V		1.96				Z F
ZURI	01	0855	0953D	0927	N13	E43	.682	11976	4.6	58D	2B		P	0927	4.84	6.90			
CAPS	01	0900E	0956D		N13	E50	.764	11976	5.1	56D	-B	3	S	0900	.30	.50		(216)	
KHAR	01	0900E	1110		N13	E47	.730	11976	4.9	130D	2N		P	0925	3.97	6.10			E
KHAR	01	0900E	1011D		N11	E46	.716	11976	4.8	71D	1F		P	0925	1.13	1.70			D
ATHN	01	0913	1027	0923	N10	E45	.704	11976	4.8	74	1N	1		0923	2.34	3.60			
MONT	01	0917	1023	0928	N13	E48	.741	11976	5.0	66	1B		C	0928	2.58				
CRON	01	0920E	0945D	0927	N12	E46	.717	11976	4.8	25D	-N	3	V		1.20				
CRON	01	0920E	0945D	0927	N12	E46	.717	11976	4.8	25D	-N	1	V		1.20				
CANR	01	0922	0945D		N11	E46	.716	11976	4.8	23D	-B	3	V	0926	1.80	1.80			
ONDR	01	0922E	0952		N14	E47	.731	11976	4.9	30D	2N		V	0925			2.90		CIJ
LOCA	01	0925E	1047D	0927	N12	E45	.705	11976	4.8	82D	1N		P	0927	2.53	3.60			
45469	01	0920	1215	0935	N13	E45	.706	11976	4.8	175	*1B				1.86				2 1 1 11
CATA	01	0920	1215	0935	N13	E45	.706	11976	4.8	175	1B		C	0935	1.86	2.62		(302)	TZ
RAMY	01	1051E	1106D	1054U	N13	E47	.730	11976	5.0	17D	-N	1	C		1.58				DE
GRP45470	01	1135	1207	1147	N13	E46	.718	11976	4.9	32	1N				1.34				5 5 5 10
MCMA	01	1125E	1220D		N16	E45	.710	11976	4.9	55D	-B		C	1138	.72	1.00			BE
RAMY	01	1133	1155	1134U	N13	E47	.730	11976	5.0	22	-N	2	C		1.30				DE
KHAR	01	1138E	1228D		N13	E47	.730	11976	5.0	50D	2F		P	1143	3.40	5.20			
CANR	01	1143	1153	1147	N12	E44	.693	11976	4.8	10	-N	3	V	1147	.80	1.00			
CAPS	01	1150E	1200D		N12	E48	.740	11976	5.1	10D	-N	2	S	1151	.50	.80		(180)	
GRP45471	01	1148	1217	1153	S20	W04	.439	11974	1.2	29	-B				1.53				8 8 7 11
CATA	01	1145	1230	1155	S20	W04	.439	11974	1.2	45	-B		C	1155	1.39	1.55		(309)	
ATHN	01	1148	1225	1151	S20	W02	.436	11974	1.3	37	-B	3	C		1.98				F
MCMA	01	1148	1225	1150	S20	W04	.439	11974	1.2	37	-B		C	1150	.83	.90			EV
CANR	01	1148	1207	1151	S20	W04	.439	11974	1.2	19	-N	2	C	1151	1.72	1.92			
KIEV	01	1149	1200	1150	S21	W04	.455	11974	1.2	11	-F		C	1150	1.03	1.10		55	DI
CANR	01	1149	1205	1151	S20	W05	.442	11974	1.1	16	-N	3	V	1151	1.80	1.80			
CAPS	01	1158E	1223D		S18	W08	.423	11974	31.9	33D	-B	1	S	1155	1.50	1.60		(265)	
KHAR	01	1151E	1228		S19	W04	.424	11974	1.2	29D	1B		P	1155	2.27	2.50			D
ONDR	01	1155E	1206	1158	S22	E00	.466	11974	1.5	11D	-B		V	1158			3.00		CD

Note: Catania and Capri-S express Maximum Intensities in percent of the local undisturbed chromosphere instead of percent of the local continuum. Parentheses are used to indicate this difference.

SOLAR FLARES
Confirmed
AUGUST 1972

OBSERV-ATORY	OBSERVED UT DATE 1972 AUG	START	END	MAX. PHASE	LOCATION APPROX. LAT.	APPROX. MER. DIST.	CENTRAL DISTANCE	NOAA PLAGE REGION	CMP DAY	DURATION MIN.	IMPORTANCE	OBS. COND.	OBS. TYPE	MEASUREMENTS TIME UT	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH Hg	MAX. INT. %	REMARKS
GRP45474	01	1537	1601	1542	S19	W05	.427	11974	1.3	24	--F				.58				4 4 3 7
CANR	01	1530	1615		S19	W09	.443	11974	1.0	45	-N	2	V	1540	.80	.80			
HUAN	01	1537	1603		S19	W06	.430	11974	1.2	26	-F	1	C	1542	.41	.46			E
MCMA	01	1540	1556D	1543	S20	W05	.442	11974	1.3	160	-F		C	1543	.52	.50			EH
BOUL	01	1541	1551	1541	S18	W01	.403	11974	1.6	10	-N	3	V						
GRP45476	01	1715	1729	1719	S05	E27	.485	11979	3.7	14	--F				.60				2 2 1 4
HUAN	01	1714	1727		S04	E27	.480	11979	3.7	13	-F	1	C						
CANR	01	1715	1730	1719	S05	E27	.485	11979	3.7	15	-F	2	V		.60	.70			
GRP45477	01	1716	1734	1720	S17	W43	.746	11970	29.5	18	--F				1.10				2 2 1 4
CANR	01	1713	1722	1720	S17	W43	.746	11970	29.5	9	-F	2	V		1.10	1.30			
HUAN	01	1719	1745U		S17	W43	.746	11970	29.5	26D	-F	1	C						
	01	2102	2127	NO FLARE PATROL															
	01	2153	2217	NO FLARE PATROL															
GRP45478	01	2318	0018	2320	N12	E32	.533	11976	4.4	60	-N				1.00				2 2 2 3
CRON	01	2315E	2355		N12	E25	.430	11976	3.8	40D	-N	1	V		1.20				
BOUL	01	2320	0018	2320	N12	E39	.629	11976	4.9	58	-N	3	V	2320	.80	1.20			
	01	2328	0018	NO FLARE PATROL															
479 BOUL	01	2353	0004	2353	S14	W32	.607	11970	30.6	11	--F	3	V						1
480 BOUL	02	0007	0018	0008	N08	W90	1.000	11972	26.3	11	-N	3	V						1
481 BOUL	02	0013	0018	0015	S14	W32	.608	11970	30.6	5	-N	3	V						2
	02	0120	0238	NO FLARE PATROL															
	02	0305	0316	NO FLARE PATROL															
9 STATIONS REPORTING GROUP 45482. 0 STATIONS OBSERVING AND NOT REPORTING.																			
GRP45482	02	0605	0710	(0620)	N14	E34	.565	11976	4.8	65	1N				4.39				3 3 3 5
BUCA	02	0605	0710		N13	E33	.549	11976	4.7	65	1F		P	0615	3.32	4.00			B
MITK	02	0619E	0703D		N14	E33	.552	11976	4.7	44D	2F		P	0619	7.84	9.20			F
CAPS	02	0624E	0825D		N15	E35	.582	11976	4.9	121D	1B	2	P	0625	2.80	2.40		(216)	
45482	02	0336	0608	0355	N12	E34	.561	11976	4.7	152	*3N				12.07				2 1 1 3
SIBE	02	0336	0608		N12	E34	.561	11976	4.7	152	3N		P	0338	12.07	15.00		84	EZ
ATHN	02	0355E	0451	0355U	N15	E35	.582	11976	4.8	56D	1B	1	V		2.64				U F
45482	02	0505	0800	0515	N13	E35	.577	11976	4.8	175	*2B				6.96				2 1 1 4
CATA	02	0505E	0800	0515	N13	E35	.577	11976	4.8	175D	2B		P	0515	6.96	8.60		(288)	Z
MONT	02	0736	0758	0739	N14	E35	.579	11976	4.9	22	-N		C	0739	1.55				H
45482	02	0316	0506	0410	N13	E35	.577	11976	4.8	110	*1B				3.37				2 1 1 4
TEHR	02	0316E	0506D	0410U	N13	E35	.577	11976	4.8	110D	1B	2	V		3.37				Z U
PALE	02	0321E	0426D	0327U	N11	E37	.601	11976	4.9	65D	1B	2	V		1.86				U
GRP45487	02	1043	1111	1049	S12	W42	.712	11970	30.3	28	1N				2.37				8 8 7 9
TEHR	02	1043	1104	1048	S13	W41	.706	11970	30.4	21	-N	4	V		1.37				F
CAPS	02	1043	1118D		S11	W40	.685	11970	30.4	35D	-B	2	V	1050	.60	.80		(196)	
CANR	02	1043	1213E	1046	S11	W45	.741	11970	30.1	90D	-N	2	C	1046	1.51	1.72			
KHAR	02	1044E	1200D		S12	W43	.723	11970	30.2	76D	2N		V						
ABST	02	1045E	1107D	1052	S14	W43	.732	11970	30.2	22D	2F		P	1052	4.50	6.50		74	EZ
ZURI	02	1045E	1047D	1047	S13	W41	.706	11970	30.4	2D	2B		P	1047	5.47	7.70			
CATA	02	1045E	1125	1050	S12	W42	.712	11970	30.3	40D	1B		P	1050	2.61	3.76		(234)	
ATHN	02	1048E	1102	1049	S11	W42	.708	11970	30.3	14D	-N	3	V		.50				DE
GRP45489	02	1601	1621	1607	N15	E30	.513	11976	4.9	20	--N				.75				3 3 2 4
CANR	02	1600	1624	1610	N17	E29	.507	11976	4.8	24	-N	2	V	1610	.50	.60			
HUAN	02	1601	1620	1607U	N16	E29	.503	11976	4.8	19	-N	1	C						
ATHN	02	1604E	1620	1604U	N13	E32	.535	11976	5.1	16D	-N	2	V		.99				DE
GRP45491	02	1839	1857	1844	N14	E26	.452	11976	4.7	18	1B				1.81				3 3 2 3
HUAN	02	1838	1946U	1845U	N15	E26	.456	11976	4.7	68D	1N	1	C	1845	2.17	2.46			H
PALE	02	1838	1859	1842	N13	E28	.477	11976	4.9	21	-B	4	V		1.44				F
BOUL	02	1841	1855	1845	N13	E25	.433	11976	4.7	14	1B	2	V						
5 STATIONS REPORTING GROUP 45492. 0 STATIONS OBSERVING AND NOT REPORTING.																			
GRP45492	02	1958	2336	2058	N14	E28	.481	11976	4.9	218	2B				9.49				2 2 2 2
HUAN	02	1958	2117D		N15	E27	.470	11976	4.9	79D	2B	1	P	2057	8.66	10.00			UZ
PALE	02	2006E	2336	2058	N13	E28	.477	11976	4.9	210D	2B	3	V		10.31				Z U
PALE	02	2006E	2336	2023	N13	E28	.477	11976	4.9	210D	1B	3	V		4.13				Z U
PALE	02	2006E	2336	2010	N13	E28	.477	11976	4.9	210D	1B	3	V		3.09				Z U

SOLAR FLARES
Confirmed
AUGUST 1972

OBSERV-ATORY	OBSERVED UT				LOCATION					DURATION	IMPORTANCE	OBS.		MEASUREMENTS					REMARKS
	DATE	START	END	MAX. PHASE	APPROX. LAT.	APPROX. MER. DIST.	CENTRAL DISTANCE	MCMATH PLAGE REGION	CMP DAY	MIN.		COND.	TYPE	TIME UT	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH HG	MAX. INT %	
	1972 AUG																		
45492	02	2248	0111	2248	N12	E25	.430	11976	4.8	143	*1B				2.40				3 1 1 4
BOUL	02	2248	0111	2248	N12	E25	.430	11976	4.8	143	1B	1	V	2248	2.40	2.60			
VORO	02	2309E	2309D		N13	E26	.477	11976	5.1		2N		S	2309	5.46	6.07		83	E
CRON	02	2315E	2355		N12	E25	.430	11976	4.8	400	-N	1	V		1.20				
493 HUAN	02	2058	2103D	2100	S18	W22	.534	11974	1.2	5D	--F	1	P	2100	.26	.26			D 2
494 PALE	02	2059E	2106	2100U	S19	E21	.535	11979	4.4	7D	--N	3	V		.52				F 2
495 PALE	02	2253	2302	2254	S19	E22	.544	11979	4.6	9	--N	3	V		.41				DE 2
496 BOUL	02	2255	2256	2255	S19	W23	.554	11974	1.2	1	--F	1	V						2
GRP45502	03	1405	1416	1409	N11	E17	.302	11976	4.9	11	--F				.44				5 4 3 8
HUAN	03	1405	1413	1407	N11	E17	.302	11976	4.9	8	-F	1	C	1407	.36	.38			
BUCA	03	1405	1420		N11	E18	.317	11976	4.9	15	-F		C	1409	.55	.60			
CANR	03	1406	1416	1408	N11	E17	.302	11976	4.9	10	-N	3	V	1408	.40	.40			
RAMY	03	1408E	1412D		N10	E15	.266	11976	4.7	4D	-F	2	V						DE
HTPR	03	1410	1415	1412	N11	E28	.472	11976	5.7	5	-F		C	1412	.31	.30			
GRP45503	03	1503	1527	1505	S12	W57	.861	11970	30.4	24	-N				1.68				6 6 5 6
CANR	03	1501	1524	1502	S09	W59	.872	11970	30.2	23	-N	2	C	1502	.86	1.74			
RAMY	03	1502E	1525D	1504U	S14	W57	.866	11970	30.4	23D	1N	2	V		2.75				DE
HUAN	03	1502	1537U		S13	W57	.863	11970	30.4	35D	-N	1	C						
ATHN	03	1503E	1544	1503	S12	W56	.853	11970	30.4	41D	-N	1		1503	1.52	2.04			
BUCA	03	1505	1509		S12	W56	.853	11970	30.4	4	1B		P	1505	2.76	4.70			C
HTPR	03	1507	1520	1508	S13	W56	.855	11970	30.4	13	-N		C	1508	.52	1.00			
504 HUAN	03	1747	1755	1748	S09	E68	.936	11980	8.8	8	--F	1	C						3
	03	2003	2020	NO FLARE PATROL															
505 HUAN	03	2037	2043	2038	N10	E13	.234	11976	4.8	6	--F	1	C	2038	.31	.32			1
	03	2051	2100	NO FLARE PATROL															
506 HUAN	03	2144E	2215D		N13	E12	.238	11976	4.8	31D	-B	1	P	2215	1.29	1.35			B 2
	03	2215	2217	NO FLARE PATROL															
GRP45508	04	0527	0613	0534	N15	E09	.219	11976	4.9	46	-F				2.19				3 2 2 6
HTPR	04	0527	0610	0533	N15	E09	.219	11976	4.9	43	-F		C	0533	.93	.90			
ATHN	04	0534E	0615D	0534	N15	E09	.219	11976	4.9	41D	-N	1		0534	3.45	3.35			
TACH	04	0545E	0603D		N11	E12	.223	11976	5.1	18D	-N		V	0545	1.83	1.89		48	D
16 STATIONS REPORTING GROUP 45509. 0 STATIONS OBSERVING AND NOT REPORTING.																			
GRP45509	04	0617	0855	0640	N14	E08	.195	11976	4.9	158	3B				15.36				10 8 8 10
CATA	04	0525	0905	0638	N15	E08	.207	11976	4.8	220	3B		C	0638	15.08	15.41		(536)	Z
CAPS	04	0605E	1158D		N12	E08	.172	11976	4.9	353D	3B	2	P	0639	15.00	15.00		(530)	
HTPR	04	0619	1100	0627	N15	E08	.207	11976	4.9	281	2B		C	0627	8.46	8.50			LUVZ
ATHN	04	0621	0852	0638	N15	E09	.219	11976	4.9	151	2B	3		0638	11.52	11.32			
CRON	04	0621	0758	0635	N14	E09	.207	11976	4.9	89	3B	1	C	0635	16.13	16.20			
ABST	04	0631E	1137	0631	N14	E08	.195	11976	4.9	306D	3B		P	0631	15.30	15.60			FHILZ
HONT	04	0635	0848D	0635	N14	E09	.207	11976	4.9	133D	3B		C	0635	15.47				U
CAPF	04	0645E	0730D	0645	N14	E08	.195	11976	4.9	45D	4B		P	0645	25.89	26.40			
CULG	04	0646E	0703		N14	E10	.220	11976	5.0	17D	3B		P	0654	15.47	15.00			
CANR	04	0708E	0923	0708U	N14	E09	.207	11976	5.0	135D	2B	2	C	0708	9.14	9.14			
45509	04	0740	1000	(0751)	N13	E08	.183	11976	4.9	140	*2B				16.34				2 2 1 11
ISTA	04	0740	1000		N13	E08	.183	11976	4.9	140	1B								F
ARCE	04	0751E	1000D		N13	E08	.183	11976	4.9	129D	3B		C	0751	16.34	19.30			HITB
45509	04	0858	1045	1008	N15	E06	.187	11976	4.8	107	*1B				3.57				3 2 1 11
KHAR	04	0858E	1045D		N15	E07	.197	11976	4.9	107D	1B		V						DH
KODA	04	0920E	0926D		N14	E03	.149	11976	4.6	6D	2B		S	0920			2.72		BI
ZURI	04	1008E	1028D	1008	N14	E05	.163	11976	4.8	20D	1N		P	1008	3.57	3.60			
45509	04	0815	1130	0829	N12	E06	.147	11976	4.8	195	*2N				7.35				3 1 1 13
LOCA	04	0815E	1130D	0820	N12	E06	.147	11976	4.8	195D	2N		C	0820	7.35	7.40			
CANR	04	0830	0900	0838	N16	E07	.210	11976	4.9	30	-N	2	V		1.80	1.70			
KHAR	04	1053E	1205D		N14	E06	.173	11976	4.9	72D	1N		P	1117	2.06	2.30			E

SOLAR FLARES
Confirmed
AUGUST 1972

OBSERVATORY	OBSERVED UT				LOCATION					DURATION	IMPORTANCE	OBS. COND.	OBS. TYPE	MEASUREMENTS					REMARKS
	DATE	START	END	MAX. PHASE	APPROX. LAT.	APPROX. MER. DIST.	CENTRAL DISTANCE	MCMATH PLAGE REGION	CMP DAY	MIN.				TIME UT	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH Hg	MAX. INT. %	
	1972 AUG																		
GRP45512	04	1307	1341	1317	N11	W00	.088	11976	4.5	34	-N				1.00				8 8 7 9
ZURI	04	1240	1313	1254	N14	E05	.163	11976	4.9	33	-N		C	1254	1.83	1.80			
ARCE	04	1300E	1352D		N13	E01	.123	11976	4.6	52D	-B		C	1315	1.44	1.50			H
CANR	04	1305	1335	1318	N12	W01	.106	11976	4.5	30	-N	3	V	1318	.60	.60			
ZURI	04	1308	1314D		N13	E02	.127	11976	4.7	6D	1N		P						
HTPR	04	1308	1340	1316	N12	W01	.106	11976	4.5	32	-N		C	1316	.93	.90			
MCMA	04	1308	1342	1310	N13	W01	.123	11976	4.5	34	-N		C	1310	.77	.80			E
CATA	04	1310	1340D	1315	N03	W01	.055	11976	4.5	30D	-B		P	1315	1.39	1.40		(234)	
ATHN	04	1313E	1337	1316	N12	W01	.106	11976	4.5	24D	-N	1		1316	.85	.80			
CAPS	04	1317E	1341D		N12	E04	.125	11976	4.9	24D	-B	2	P	1320	1.00	1.00		(216)	
ARCE	04	1321	1356D	1327	N15	W05	.178	11976	4.2	35D	-F		C	1327	.59	.60			
ZURI	04	1324E	1342	1324	N13	E02	.127	11976	4.7	18D	1N		P	1324	3.78	3.80			
GRP45513	04	1514	1528	1516	N13	W01	.123	11976	4.6	14	--N				.47				5 5 5 7
ZURI	04	1514	1532	1516	N14	E00	.140	11976	4.6	18	-N		C	1516	.84	.80			
HUAN	04	1514	1521	1515U	N13	W01	.123	11976	4.6	7	-F	1	C	1515	.26	.26			D
MCMA	04	1514	1528	1516	N14	W02	.144	11976	4.5	14	-F		C	1516	.41	.40			E
CANR	04	1515	1526	1515	N14	W01	.141	11976	4.6	11	-N	3	V	1515	.30	.30			
ATHN	04	1516E	1534	1520	N12	W02	.110	11976	4.5	18D	-N	1		1520	.52	.50			
515 MCMA	04	2208	2220	2210	N13	W02	.127	11976	4.8	12	--F		C	2210	.41	.40			E 1
	04	2322	2334	NO FLARE PATROL															
GRP45516	05	0102	0107	0107	N12	W04	.124	11976	4.7	5	--F				.43				2 2 2 5
CRON	05	0102E	0107		N12	W05	.135	11976	4.7	5D	-F	3	V		.50				
CRON	05	0102E	0107		N12	W05	.135	11976	4.7	5D	-F	3	V		.50				
PALE	05	0107E	0107D	0107U	N11	W03	.101	11976	4.8		-N	2	C		.36				F
517 MITK	05	0120E	0143D		N09	W02	.062	11976	4.9	23D	--N		C	0120	.62	.60			D 3
GRP45522	05	0706	0721	0710	N16	W10	.241	11976	4.5	15	--F				1.08				7 7 7 8
ZURI	05	0703	0717	0709	N15	W14	.282	11976	4.2	14	-N		C	0709	.97	1.00			
ABST	05	0703	0723	0707	N16	W10	.241	11976	4.5	20	1F		C	0707	2.07	2.10			E
HTPR	05	0704	0718	0706	N16	W12	.266	11976	4.4	14	-F		C	0706	.72	.70			
CAPS	05	0708E	0728D		N17	W05	.208	11976	4.9	20D	-N	4	P	0709	1.40	1.40		(171)	
TEHR	05	0708	0717	0713	N15	W10	.230	11976	4.5	9	-F	3	V		.56				DE
CATA	05	0710	0725	0710	N15	W11	.242	11976	4.5	15	-N		C	0710	.87	.90		(178)	
ATHN	05	0712E	0720	0712U	N15	W10	.230	11976	4.5	8D	-F	2	V		.99				DE
GRP45524	05	0753	0814	0758	S17	W63	.916	11974	31.6	21	--F				.40				2 2 2 8
MONT	05	0750	0813	0756	S18	W63	.918	11974	31.6	23	-F		C	0756	.21				
CATA	05	0755	0815	0800	S16	W62	.908	11974	31.7	20	-N		C	0800	.58	1.37		(164)	
GRP45526	05	0819	0837	0820	N16	W09	.230	11976	4.7	18	--N				.65				3 3 3 8
ARCE	05	0816	0830	0820	N16	W10	.241	11976	4.6	12	-F		C	0820	.66	.70			
CAPS	05	0820E	0840D		N17	W05	.208	11976	5.0	20D	-N	2	V	0821	.50	.50		(188)	
CATA	05	0820	0840	0820	N16	W11	.253	11976	4.5	20	-N		C	0820	.80	.84		(188)	
GRP45530	05	0922	0934	0927	S08	W17	.375	11979	4.1	12	--F				.20				3 3 3 10
HTPR	05	0920	0934D		S08	W17	.375	11979	4.1	14D	-F		C	0929	.21	.20			
ARCE	05	0923	0931D	0927	S08	W17	.375	11979	4.1	8D	-N		C	0927	.30	.30			
MONT	05	0923	0933	0926	S08	W16	.363	11979	4.2	10	-F		C	0926	.10				
GRP45534	05	1121	1134	1124	N13	W12	.237	11976	4.6	13	--N				.52				4 4 3 8
RAMY	05	1119	1131	1123	N14	W12	.246	11976	4.6	12	-N	3	C		.56				F
CANR	05	1122	1136	1125	N15	W12	.255	11976	4.6	14	-N	2	V		.50				
ATHN	05	1123E	1131	1125	N17	W12	.277	11976	4.6	8D	-N	3	V		.50				DE
CAPS	05	1126E	1139D		N07	W12	.207	11976	4.6	13D	-F	2	S						
GRP45543	05	2019	2037	2024	N12	W12	.229	11976	4.9	18	--F				.46				3 3 3 3
RAMY	05	2018	2037	2021	N12	W12	.229	11976	4.9	19	-F	3	C		.65				DE
MCMA	05	2019	2036	2022	N12	W12	.229	11976	4.9	17	-F		C	2022	.31	.30			E
PALE	05	2024E	2034D	2028U	N11	W12	.222	11976	5.0	10D	-N	3	V		.41				
	05	2334	2353	NO FLARE PATROL															
	05	2357	0008	NO FLARE PATROL															
	06	0025	0037	NO FLARE PATROL															
	06	0043	0046	NO FLARE PATROL															
545 MITK	06	0056	0108	0058	N08	W15	.259	11976	4.9	12	--F		C	0058	.52	.50			D 1
	06	0135	0138	NO FLARE PATROL															

SOLAR FLARES
Confirmed
AUGUST 1972

OBSERVATORY	OBSERVED UT				LOCATION					DURATION	IMPORTANCE	OBS.		MEASUREMENTS					REMARKS
	DATE 1972 AUG	START	END	MAX. PHASE	APPROX. LAT.	APPROX. MER. DIST.	CENTRAL DISTANCE	MOUNT PLAGE REGION	CMP DAY	MIN.		COND.	TYPE	TIME UT	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH Hg	MAX. INT. %	
GRP45546	06	0240	0258	0243	S18	W72	.966	11974	31.7	18	1N				1.20				3 3 3 5
MITK	06	0236	0251	0241	S18	W74	.974	11974	31.6	15	1F		C	0241	.93				E
PALE	06	0238E	0239D	0238U	S17	W73	.969	11974	31.6	1D	-N	2	C		.27				
KODA	06	0247	0305	0249	S19	W69	.953	11974	31.9	18	1N		V	0247	2.41	2.30	1.80		D
GRP45547	06	0422	0429	0423	N12	W19	.336	11976	4.8	7	--N				.37				3 3 3 6
MANI	06	0402E	0425	0420	N13	W21	.372	11976	4.6	23D	-N	1		0420	.41	.64			
ATHN	06	0418	0427	0421	N10	W28	.345	11976	4.7	9	-N	1	C		.58				DE
TEHR	06	0425	0435D	0428	N14	W16	.302	11976	5.0	10D	-F	3	V		.19				DE
GRP45550	06	0631	0644	0636	N12	W17	.305	11976	5.0	13	--F				.43				3 3 3 7
ATHN	06	0630	0648	0632	N11	W17	.301	11976	5.0	18	-F	2	C		.33				DE
HTPR	06	0631	0645	0635	N11	W18	.317	11976	4.9	14	-F		C	0635	.41	.48			D
TEHR	06	0635E	0647	0640	N14	W17	.317	11976	5.0	12D	-N	3	V		.56				DE
GRP45553	06	0824	0841	0829	N11	W18	.317	11976	5.0	17	--N				.51				4 4 3 12
HTPR	06	0820	0835	0828	N10	W18	.313	11976	5.0	15	-N		C	0828	.72	.70			D
CATA	06	0825	0845D	0830	N12	W18	.321	11976	5.0	20D	-N		P	0830	.40	.43		(195)	
ISTA	06	0826	0835		N12	W18	.321	11976	5.0	9	-F								D
ARGE	06	0827E	0848D		N11	W19	.332	11976	4.9	21D	-B		C	0827	.42	.40			
GRP45554	06	0902	0930	0911	S09	W33	.591	11979	3.9	28	--N				.33				6 6 6 8
CANR	06	0858	0940	0910	S09	W33	.591	11979	3.9	42	-N	2	V		.30	3.60			
ATHN	06	0901	0923	0910	S08	W35	.611	11979	3.8	22	-F	3	V		.33				DE
CATA	06	0905	0925	0910	S08	W34	.598	11979	3.8	20	-N		C	0910	.46	.58		(190)	
HTPR	06	0905	0925	0914	S09	W33	.591	11979	3.9	20	-N		C	0914	.31	.40			D
ARGE	06	0907E	0948D		S09	W30	.552	11979	4.1	33D	-N		C	0910	.30	.30			
CAPS	06	0911E	0924D		S09	W31	.565	11979	4.1	13D	-F	3	S	0912	.30	.30		(147)	
GRP45559	06	0921	0930	0925	N16	W25	.445	11976	4.9	9	--N				.55				5 5 4 10
CAPS	06	0920	0929D		N16	W23	.416	11976	4.7	9D	-F	3	V	0923	.70	.70		(158)	
ARGE	06	0920E	0930D		N16	W26	.459	11976	4.4	10D	-N		C	0925	.59	.70			
HTPR	06	0922	0929	0924	N15	W25	.448	11976	4.5	7	-N		C	0924	.41	.48			
ISTA	06	0922	0927		N14	W23	.406	11976	4.7	5	-N								
ATHN	06	0925E	0934	0925U	N18	W29	.510	11976	4.2	9D	-N	3	V		.50				DE
GRP45559	06	1134	1148	1138	S08	W34	.598	11979	3.9	14	--N				.45				6 6 5 7
HTPR	06	1133	1142	1135	S08	W37	.636	11979	3.7	9	-N		C	1135	.41	.50			
ONOR	06	1133E	1144		S08	W36	.624	11979	3.8	11D	-B		V	1134			2.50		COH
CANR	06	1135	1200	1142	S09	W34	.603	11979	3.9	25	-N	2	V		.60	.84			
CATA	06	1135	1145	1135	S07	W36	.619	11979	3.8	10	-B		C	1135	.40	.51		(240)	
CAPS	06	1138E	1152D		S09	W28	.526	11979	4.4	14D	-B	2	V	1138	.50	.60		(265)	
ATHN	06	1141E	1145	1141U	S06	W33	.575	11979	4.0	4D	-F	2	V		.33				DE
GRP45563	06	1547	1604	1551	N20	W21	.417	11976	5.1	17	--N				.63				4 4 4 10
HUAN	06	1546	1558	1550	N20	W23	.443	11976	4.9	12	-F	1	C	1550	.21	.23			D
CAPS	06	1546E	1607D		N19	W17	.358	11976	5.4	21D	-B	3	V	1547	.30	.30		(216)	
HTPR	06	1548E	1600		N20	W23	.443	11976	4.9	12D	-N		C	1551	.41	.40			
BOUL	06	1549	1610	1552	N21	W20	.414	11976	5.2	21	-F	3	V	1552	1.60	1.70			
GRP45564	06	1614	1626	1617	N17	W19	.367	11976	5.3	12	--F				.33				6 6 5 8
RAMY	06	1612	1627	1613	N18	W19	.375	11976	5.2	15	-F	3	C		.31				DE
BOUL	06	1613	1635	1614	N19	W16	.346	11976	5.5	22	-F	3	V	1614	.30	.30			
RAMY	06	1613E	1627	1613U	N18	W19	.375	11976	5.3	14D	-N	3	V		.31				DE
ONOR	06	1614E	1622	1617	N15	W23	.411	11976	5.0	8D	-F		V	1617			1.90		CE
HUAN	06	1614E	1625D		N18	W19	.375	11976	5.3	11D	-F	1	C	1615	.21	.22			D
CANR	06	1614E	1628	1615	N17	W19	.367	11976	5.3	6D	-N	3	V	1615	.50	.50			
HTPR	06	1615	1627	1621	N18	W15	.323	11976	5.6	12	-F		C	1621	.31	.38			
HTPR	06	1630	1634	1630	N12	W20	.352	11976	5.2	4	-N		C	1630	.31	.30			
GRP45565	06	1649	1704	1654	N13	W24	.417	11976	4.9	15	--N				.70				4 4 4 5
HUAN	06	1648	1653D		N12	W23	.398	11976	5.0	5D	-F	1	P	1651	.36	.39			E
HTPR	06	1648	1708	1657	N11	W25	.426	11976	4.8	12	-N		C	1657	1.24	1.20			
HTPR	06	1648	1710	1657	N13	W26	.447	11976	4.7	22	-F		C	1657	.31	.38			
BOUL	06	1650	1712	1650	N14	W25	.436	11976	4.8	22	-N	3	V	1650	.30	.30			
PALE	06	1655E	1701	1656	N14	W23	.406	11976	5.0	6D	-N	3	C		.91				F
GRP45566	06	1752	1816	1759	S01	W43	.689	11979	3.5	24	-N				.90				4 4 4 4
BOUL	06	1745	1810	1800	N02	W43	.683	11979	3.5	25	-N	2	C	1800	.97	1.32			
PALE	06	1753	1816	1757	S03	W42	.681	11979	3.6	23	-N	3	C		.55				F
HTPR	06	1754	1809D		S04	W43	.696	11979	3.5	15D	-B		C	1803	1.34	1.70			D
CANR	06	1755	1822	1759	N01	W45	.709	11979	3.4	27	-N	2	C	1759	.75	1.87			
GRP45567	06	2143	2202	2148	N15	W31	.525	11976	4.6	19	--F				.31				2 2 2 3
BOUL	06	2143	2205	2145	N15	W34	.567	11976	4.4	22	-F	3	V	2145	.30	.38			
PALE	06	2148E	2158	2150U	N15	W28	.483	11976	4.8	10D	-N	3	V		.31				F
	07	0225	0240	NO FLARE PATROL															

SOLAR FLARES
Confirmed
AUGUST 1972

OBSERVATORY	OBSERVED UT				LOCATION					DURATION	IMPORTANCE	OBS.			MEASUREMENTS					REMARKS
	DATE	START	END	MAX. PHASE	APPROX. LAT.	APPROX. MER. DIST.	CENTRAL DISTANCE	MCMATH PLAGE REGION	CMP DAY	MIN.		COND.	TYPE		TIME UT	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH Ha	MAX. INT. %	
	1972 AUG																			
	07	0245	0253	NO FLARE PATROL																
GRP45569	07	0252	0320	0255	N15	W30	.511	11976	4.9	28	-B					1.09				2 2 2 3
MANI	07	0252E	0320+	0254	N14	W33	.550	11976	4.6	28D	-B	1			0254	1.24	1.50			
TEHR	07	0253E	0320	0255	N15	W27	.468	11976	5.1	27D	-N	3	V			.94				F
6 STATIONS REPORTING GROUP 45570. 0 STATIONS OBSERVING AND NOT REPORTING.																				
GRP45570	07	0349	0444	0359	N14	W30	.508	11976	4.9	55	1B					5.75				4 4 4 4
TACH	07	0316E	0445	0359	N14	W30	.508	11976	4.9	89D	2F		V		0359	8.66	10.06		73	EKZ
MANI	07	0348E	0450	0355	N14	W33	.550	11976	4.7	62D	1B	1			0355	3.92	4.60			
TEHR	07	0350E	0442	0357	N15	W27	.468	11976	5.1	52D	1B	4	V			2.83				F
KODA	07	0400	0439	0403	N14	W31	.522	11976	4.8	39	2B		C		0406	7.60	7.60	2.28		I
45570	07	0406	0503	0419	N17	W30	.519	11976	4.9	57	*1B					5.53				2 2 2 5
CULG	07	0406E	0515		N16	W30	.515	11976	4.9	69D	1B		P		0414	4.13	4.60			
ATHN	07	0419E	0451	0419U	N18	W30	.523	11976	4.9	32D	2N	1	V			6.93				Z U
GRP45575	07	1022	1040	1027	S03	W52	.796	11979	3.5	18	-N					1.07				9 9 8 11
MONT	07	1020	1043	1026	S03	W53	.806	11979	3.5	23	-N		C		1026	1.13				
ATHN	07	1021	1035	1025	S02	W53	.804	11979	3.5	14	-N	3	V			.58				DE
ZURI	07	1022	1034	1024	S03	W52	.796	11979	3.5	12	-N		C		1024	1.20	2.00			
HTPR	07	1022	1040	1025	S05	W52	.800	11979	3.5	18	-N		C		1025	1.03	1.60			D
ABST	07	1023	1034	1026	S04	W54	.818	11979	3.4	11	1F		C		1026	2.88	5.10		80	E
CATA	07	1025	1040D	1030	S02	W53	.804	11979	3.5	15D	-N		P		1030	.40	.69		(178)	
TEHR	07	1026E	1034D	1027U	S04	W51	.787	11979	3.6	8D	-N	4	V			.84				F
CAPS	07	1027E	1056D		S04	W50	.777	11979	3.7	29D	-N	2	V		1028	.60	1.00		(171)	
UPIC	07	1028E	1204	1031	S02	W54	.814	11979	3.4	96D	1F		C							
GRP45577	07	1055	1144	1103	N15	W34	.567	11976	4.9	49	1N					2.77				9 9 9 10
HTPR	07	1050	1145	1107	N17	W35	.586	11976	4.8	55	-N		C		1107	1.44	1.70			D
MONT	07	1051	1144	1106	N15	W34	.567	11976	4.9	53	1B		C		1106	3.40				H
RAMY	07	1054	1146	1100	N16	W34	.570	11976	4.9	52	1N	3	C			2.04				F
CATA	07	1055E	1155	1105	N15	W34	.567	11976	4.9	68D	1B		P		1105	3.94	4.81		(214)	
CANR	07	1055	1137	1100	N23	W38	.646	11976	4.6	42	1N	2	C		1108	2.58	3.37			
HTPR	07	1055	1140	1107	N10	W39	.626	11976	4.5	45	-N		C		1109	.93	1.10			
ZURI	07	1056	1140	1101	N14	W34	.564	11976	4.9	44	1B		C		1101	3.36	4.00			
ATHN	07	1056E	1137	1101	N15	W33	.553	11976	5.0	41D	1N	3	V			2.64				U F
CAPS	07	1058E	1147D		N13	W32	.534	11976	5.1	49D	-B	2	V		1059	1.60	1.90		(234)	
TEHR	07	1102E	1149D	1104U	N15	W32	.539	11976	5.1	47D	1N	2	V			3.01				F
GRP45578	07	1200	1232	1204	N13	W34	.562	11976	5.0	32	1B					2.25				11 11 9 12
ABST	07	1156	1249D	1157	N12	W35	.574	11976	4.9	53D	1N		P		1157	2.97	3.60		89	EJVZ
RAMY	07	1200	1230	1204	N13	W36	.589	11976	4.8	30	-B	4	C			1.67				F
ARCE	07	1200E	1400D		W11	W34	.558	11976	4.9	120D	1B		C		1203	2.96	3.50			BI
ATHN	07	1200E	1223	1202	N15	W30	.511	11976	5.3	23D	-N	3	V			1.32				F
CATA	07	1200	1240	1205	N14	W33	.550	11976	5.0	40	1B		C		1205	2.61	3.15		(251)	
CANR	07	1200	1225	1204	N16	W42	.673	11976	4.3	25	1N	2	C		1204	2.58	3.49			
HTPR	07	1201	1245	1205	N11	W32	.530	11976	5.1	44	-B		C		1205	1.24	1.40			CE
HTPR	07	1201	1217	1205	N14	W35	.578	11976	4.9	16	-B		C		1205	.52	.60			C
ZURI	07	1202	1223D	1203	N13	W33	.548	11976	5.0	21D	1B		P		1203	2.52	3.00			
ONDR	07	1204E	1217	1207	N12	W36	.588	11976	4.8	13D	1N		V		1207			2.60		CDEFIJ
UPIC	07	1204E	1232		N12	W33	.546	11976	5.0	28D	-B		C							
CAPS	07	1209E	1236D		N13	W32	.534	11976	5.1	27D	1B	2	P		1210	2.40	2.90		(201)	
GRP45579	07	1328	1430	1345	N17	W35	.586	11976	4.9	62	-F					1.19				4 3 2 11
RAMY	07	1304	1320	1310	N17	W35	.586	11976	4.9	16	-F	4	C			1.39				DE
ARCE	07	1305E	1355D		N18	W38	.628	11976	4.7	50D	-N		C		1323	1.38	1.80			
UPIC	07	1319E	1427		N18	W35	.589	11976	4.9	68D	1N		C							
RAMY	07	1336	1430D	1345U	N15	W36	.594	11976	4.9	54D	-F	3	V			1.55				DE
HUAN	07	1407E	1433		N16	W36	.596	11976	4.9	26D	-F	1	P		1408	.83	1.02			E
16 STATIONS REPORTING GROUP 45580. 0 STATIONS OBSERVING AND NOT REPORTING.																				
GRP45580	07	1449	1721	1534	N14	W37	.605	11976	4.8	152	3B					17.15				15 13 11 15
CAPS	07	1304	1744D	1525	N13	W32	.534	11976	5.1	280D	3B	2	P		1525	12.00	14.40		(700)	
HTPR	07	1442	1818D		N15	W35	.580	11976	5.0	216D	3B		C		1525	11.34	13.80			EITU
ONDR	07	1449E	1640		N13	W39	.629	11976	4.7	111D	3B		V		1518			17.40		CEFIJ
ATHN	07	1457E	1653D	1520	N15	W36	.620	11976	4.8	116D	2B	2	V			11.55				Z U
UPIC	07	1500E	1706D	1529	N14	W37	.605	11976	4.8	126D	4B		C							
HUAN	07	1500	1725U	1525U	N13	W37	.603	11976	4.8	145D	3B	1	C		1525	16.09	20.20			Z
CANR	07	1505	1628D	1527	N15	W40	.646	11976	4.6	75D	3N	2	C		1527	18.13	24.61			
BOUL	07	1505	1905U	1530	N16	W35	.583	11976	5.0	240D	3B	2	C		1530	21.39	23.80			
HERS	07	1507E	1618D	1534U	N15	W39	.633	11976	4.7	63D	3B		P		1539	11.28	13.50	2.58	94	CIVL
LOCA	07	1508	1710D	1526	N12	W36	.588	11976	4.9	122D	4B		C		1526	21.01	26.60			
RAMY	07	1510E	1604D	1528	N14	W40	.644	11976	4.6	54D	2B	4	V			7.73				U F
RAMY	07	1510E	1604D	1520	N14	W40	.644	11976	4.6	54D	2B	4	V			5.57				U F
ARCE	07	1529E	1630D		N12	W36	.588	11976	4.9	61D	3B		C		1529	22.53	27.50			BHI
CAPF	07	1530E	1618D	1530	N12	W32	.531	11976	5.2	40D	4B		P		1530	35.58	41.40			
ZURI	07	1536E	1720D	1539	N13	W33	.548	11976	5.2	104D	3B		P		1539	12.82	15.60			
PALE	07	1630E	1930	1639U	N14	W35	.578	11976	5.1	180D	2B	3	C			9.21				Z U

SOLAR FLARES
Confirmed
AUGUST 1972

OBSERVATORY	OBSERVED UT				LOCATION					DURATION	IMPORTANCE	OBS.		MEASUREMENTS					REMARKS
	DATE	START	END	MAX. PHASE	APPROX. LAT.	APPROX. MER. DIST.	CENTRAL DISTANCE	McMATH PLAGE REGION	CMP DAY	MIN.		CONF.	TYPE	TIME UT	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH Hα	MAX. INT. %	
	1972 AUG																		
45583	07	1445	1653	1500	N14	W37	.605	11976	4.8	128	*1B				2.66				2 2 2 11
CATA	07	1445	1505D	1455	N13	W35	.576	11976	5.0	20D	1B		P	1455	2.02	2.48		(224)	
ATHN	07	1457E	1653D	1505	N15	W38	.620	11976	4.8	116D	1B	2	V		3.30				Z U
GRP45582	07	1922	2047	1925	N12	W41	.654	11976	4.7	85	--N				.46				2 2 2 3
PALE	07	1922	2047	1925	N11	W40	.640	11976	4.8	85	-B	3	C		.55				
HUAN	07	1925U	1940		N12	W41	.654	11976	4.7	15D	-F	1	C	1930	.36	.48			DT
584 MITK	08	0123	0133	0126	S12	W58	.870	11979	3.7	10	--F		C	0126	1.03	2.00			D 3
	08	0136	0145	NO FLARE PATROL															
GRP45585	08	0355	0405	0358	N12	W44	.692	11976	4.9	10	--F				1.14				2 2 2 6
MITK	08	0355	0404	0358	N12	W43	.679	11976	4.9	9	-F		C	0358	1.44	2.00			E
MANI	08	0357E	0405	0358	N12	W45	.704	11976	4.8	8D	-N	2		0358	.83	1.16			
GRP45586	08	0435	0445	0438	S11	W58	.866	11979	3.8	10	--F				1.15				2 2 2 6
TACH	08	0434E	0447D	0438	S09	W57	.856	11979	3.9	13D	1N		V	0435	1.37	2.85		84	E
MITK	08	0436	0443	0438	S12	W59	.878	11979	3.8	7	-F		C	0438	.93	1.90			D
GRP45589	08	0554	0612	0601	S10	W59	.874	11979	3.8	18	--N				.44				5 5 5 10
ATHN	08	0553	0702D	0559	S11	W59	.876	11979	3.8	69D	-N	2	C		.33				DE
HTPR	08	0554	0609	0602	S10	W59	.874	11979	3.8	15	-F		C	0602	.31	.50			
ABST	08	0556	0628	0559	S10	W60	.882	11979	3.7	32	-F		P	0559	.90	1.80		85	FJ
TEHR	08	0600E	0607	0603	S09	W59	.872	11979	3.8	7D	-N	4	V		.19				DE
CATA	08	0600E	0605	0600	S08	W60	.879	11979	3.8	5D	-B		P	0600	.46	.93		(234)	
GRP45592	08	0738	0750	0743	S09	W62	.896	11979	3.7	12	--N				.45				7 7 5 12
UPIC	08	0733	0750	0734U	S09	W63	.903	11979	3.6	17	-F		C						
ISTA	08	0735	0750		S09	W62	.896	11979	3.7	15	-F								D
ABST	08	0738E	0749D	0742	S09	W63	.903	11979	3.6	11D	1F		P	0742	.98	2.10		68	DJ
MONT	08	0739	0745	0743	S10	W60	.882	11979	3.8	6	-N		C	0743	.52				
CATA	08	0740	0758	0745	S08	W61	.887	11979	3.7	10	-B		C	0745	.23	.51		(234)	
HTPR	08	0740	0750	0743	S10	W60	.882	11979	3.8	10	-F		C	0743	.31	.50			
CAPS	08	0746E	0758D		S08	W63	.902	11979	3.6	12D	-N	4	V	0747	.30			(182)	
GRP45599	08	1532	1542	1534	N11	W55	.814	11976	4.5	10	--F				.24				2 2 2 6
HTPR	08	1530	1546	1533	N11	W54	.804	11976	4.6	16	-F		C	1533	.21	.30			
HUAN	08	1533	1538	1534	N11	W55	.814	11976	4.5	5	-F	1	C	1534	.26	.43			D
GRP45608	08	1737	1749	1743	N11	W62	.878	11976	4.1	12	--N				.36				2 2 1 4
PALE	08	1737	1751	1743	N11	W67	.916	11976	3.7	14	-N	2	C		.36				F
HUAN	08	1737	1747		N11	W57	.834	11976	4.5	10	-N	1	C						
601 PALE	08	1952	2003	1956	S10	W69	.943	11979	3.7	11	--N	2	C		.36				F 1
	08	2044	2117	NO FLARE PATROL															
602 PALE	08	2128	2149	2134	S10	W70	.949	11979	3.6	21	-B	2	C		.72				DE 1
	08	2355	0002	NO FLARE PATROL															
8 STATIONS REPORTING GROUP 45604. 4 STATIONS OBSERVING AND NOT REPORTING.																			
GRP45604	09	0808	0828	0810	S05	W78	.981	11979	3.5	20	-N				.54				4 4 4 12
MONT	09	0806	0825	0811	S05	W80	.987	11979	3.3	19	-N		C	0811	.21				
BUCA	09	0807	0830		S06	W78	.981	11979	3.5	23	1F		C	0810	1.10				E
TEHR	09	0809E	0825	0810U	S04	W76	.973	11979	3.6	16D	-N	3	V		.56				F
CATA	09	0810	0838	0810	S02	W78	.979	11979	3.5	28	-N		C	0810	.29			(174)	
TEHR	09	0819	0824	0820	S09	W75	.972	11979	3.7	5	-N	3	V		.19				DE
45604	09	0820	0826	0822	S09	W77	.979	11979	3.6	6	*-N				.36				4 4 4 13
MONT	09	0819	0824	0823	S10	W80	.989	11979	3.3	5	-N		C	0823	.52				
CATA	09	0820	0830	0820	S08	W76	.975	11979	3.6	10	-B		C	0820	.29			(214)	
HTPR	09	0820	0825	0823	S10	W76	.976	11979	3.6	5	-N		C	0823	.31				
CRON	09	0820	0826		S09	W74	.967	11979	3.8	6	-F	3	V		.30				
CRON	09	0820	0826		S09	W74	.967	11979	3.8	6	-F	3	V		.30				
45604	09	0807	0830	0817	S04	W79	.983	11979	3.4	23	*-F				.38				4 4 3 13
HTPR	09	0806	0825	0817	S04	W80	.986	11979	3.3	19	-F		C	0817	.21				
ISTA	09	0807	0825		S03	W78	.980	11979	3.5	18	-F								E
ARCE	09	0810E	0847D		S06	W80	.987	11979	3.3	37D	-N		C	0820	.30	.90			H
CRON	09	0813E	0822		S04	W78	.980	11979	3.5	9D	-F	3	V		.40				
CRON	09	0813E	0822		S04	W78	.980	11979	3.5	9D	-F	3	V		.30				

SOLAR FLARES
Confirmed
AUGUST 1972

OBSERVATORY	OBSERVED UT				LOCATION					DURATION	IMPORTANCE	OBS.		MEASUREMENTS					REMARKS
	DATE	START	END	MAX. PHASE	APPROX. LAT.	APPROX. MER. DIST.	CENTRAL DISTANCE	McMATH PLAGE REGION	CMP DAY	MIN.		COND.	TYPE	TIME UT	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH Hα	MAX. INT. %	
	1972 AUG																		
GRP45607	09	0936	0952	0939	N15	W62	.878	11976	4.8	16	--F				.34				5 5 4 12
ARCE	09	0831E	0930D		N16	W62	.878	11976	4.7	59D	-N		C	0842	.89	1.80			
ARCE	09	0837E	0940D		N19	W62	.879	11976	4.7	63D	-F		C	0847	.39	.80			
ISTA	09	0930	0950		N18	W59	.854	11976	5.8	20	-F								D
MONT	09	0937	0951	0939	N17	W63	.886	11976	4.7	14	-N		C	0939	.21				
HTPR	09	0938	0950	0939	N17	W65	.901	11976	4.5	12	-N		C	0939	.31	.50			
BUCA	09	0940	0955		N08	W63	.887	11976	4.7	15	-F		P	0942	.44	.90			
GRP45608	09	1023	1034	1026	N17	W64	.894	11976	4.6	11	--N				.32				4 4 4 9
HTPR	09	1021	1033	1025	N17	W65	.901	11976	4.6	12	-N		C	1025	.31	.50			
MONT	09	1022	1036	1026	N17	W63	.886	11976	4.7	14	-N		C	1026	.52				H
CATA	09	1025	1035	1025	N17	W65	.901	11976	4.6	18	-B		C	1025	.17	.41		(219)	
TEHR	09	1026E	1031	1027U	N15	W62	.878	11976	4.8	5D	-N	3	V		.28				F
GRP45611	09	1550	1559	1554	N18	W69	.928	11976	4.5	9	--F				.25				3 3 3 11
HTPR	09	1549	1558	1555	N17	W70	.934	11976	4.4	9	-F		C	1555	.21				
HUAN	09	1551	1558		N17	W70	.934	11976	4.4	7	-F	1	P	1552	.21				D
ATHN	09	1552E	1602	1552U	N19	W68	.922	11976	4.6	18D	-F	3	V		.33				DE
GRP45612	09	1612	1702	1614	S08	W80	.988	11979	3.7	50	-F				.36				4 2 1 9
ATHN	09	1559E	1630D	1600	S10	W81	.991	11979	3.6	31D	-N	3	V		.17				DE
HUAN	09	1611U	1657U		S08	W80	.988	11979	3.7	46D	-F	1	C						T
BOUL	09	1612	1702	1614	S08	W79	.985	11979	3.8	50	-N	3	V						
PALE	09	1640E	1700	1640U	S09	W80	.988	11979	3.7	20D	-N	2	C		.36				
618 PALE	09	2243E	2251D	2245	S10	W85	.998	11979	3.6	8D	-N	3	V		.62				F 1
	09	2306	2350	NO FLARE PATROL															
619 MITK	10	0111	0121	0116	S11	W90	1.000	11979	3.3	10	1N		C	0116	1.44				3
GRP45621	10	0730	1111	0823	N16	W48	.743	11987	6.7	221	-N				1.86				6 2 1 17
HTPR	10	0730	0800	0741	N16	W46	.720	11987	6.9	30	-F		C	0741	.83	1.10			ETU
ARCE	10	0800E	0951D		N16	W47	.731	11987	6.8	111D	-N		C	0800	.50	.70			K
MONT	10	0810	1109	0855	N14	W49	.752	11987	6.7	179	-B		C	0855	1.86				H
ABST	10	0826	0854	0832	N17	W48	.744	11987	6.8	28	1F		C	0832	1.44	2.20		72	EZ
UPIO	10	0856E	0909D		N17	W47	.733	11987	6.8	13D	-F		C						
ONDR	10	1036E	1111		N14	W48	.740	11987	6.8	35D	1B		V	1038			3.20		CE
GRP45625	10	1248	1304	1252	S07	W90	1.000	11979	3.8	16	-N				.28				4 3 2 16
ARCE	10	1208E	1335D		S10	W90	1.000	11979	3.8	87D	-B		C	1220	.75				
CATA	10	1245	1300	1255	S04	W90	1.000	11979	3.8	15	-N		C	1255	.29			(151)	T
ATHN	10	1250E	1308	1250U	S08	W90	1.000	11979	3.8	18D	-N	3	V						DE
HUAN	10	1250	1303	1252	S08	W90	1.000	11979	3.8	13	-F	1	C	1252	.26				D
632 PALE	10	2049	2105	2050U	N09	W84	.993	11976	4.6	16	-N	2	C		.45				F 2
	10	2243	2305	NO FLARE PATROL															
633 PALE	10	2306	2314D	2308U	N11	W88	.998	11976	4.4	8D	-N	2	C		.27				1
	10	2314	2333	NO FLARE PATROL															
634 MITK	11	0104	0127	0110	N10	W90	1.000	11976	4.3	23	1N		C	0110	1.96				4
635 MITK	11	0202	0215	0204	N15	W56	.825	11987	6.9	13	-N		C	0204	.93	1.70			D 4
GRP45637	11	0546	0558	0550	N12	W89	.999	11976	4.6	12	-B				.73				4 4 3 9
ATHN	11	0543	0557	0549	N12	W90	1.000	11976	4.5	14	-N	2	C						DE
ABST	11	0544	0555	0549	N11	W90	1.000	11976	4.5	11	1B		P	0549	1.08			92	ADZ
TACH	11	0545	0559D	0550	N10	W85	.995	11976	4.9	14D	-B		C	0550	.52			66	DTY
CATA	11	0550	0600	0550	N14	W90	1.000	11976	4.5	10	1B		C	0550	.58			(278)	A
GRP45639	11	0758	0805	0800	N12	W90	1.000	11976	4.6	7	-N				.38				3 3 3 12
MONT	11	0754	0804	0756	N11	W90	1.000	11976	4.6	10	-N		C	0756	.52				
CATA	11	0800	0805	0800	N14	W90	1.000	11976	4.6	5	-N		C	0800	.40			(174)	
ARCE	11	0800E	0805D		N10	W90	1.000	11976	4.6	5D	-N		P	0800	.23				HB
GRP45642	11	1048	1058	1052	S14	E43	.735	11986	14.7	10	--F				.63				6 6 4 14
KHAR	11	1045E	1100D		S13	E43	.730	11986	14.7	15D	-F		V						D
MONT	11	1048	1057	1052	S13	E42	.720	11986	14.6	9	-N		C	1052	.72				H
ABST	11	1049	1056D	1051	S12	E45	.748	11986	14.8	7D	-N		P	1051	.90	1.30		71	D
HTPR	11	1050	1056	1052	S12	E43	.726	11986	14.7	6	-N		C	1052	.62	.70			G
TEHR	11	1052E	1058	1052U	S14	E45	.756	11986	14.8	6D	-F	3	V		.28				DE
CAPS	11	1052E	1058D		S17	E40	.719	11986	14.5	6D	-F	3	V						

SOLAR FLARES
Confirmed
AUGUST 1972

OBSERVATORY	OBSERVED UT				LOCATION					DURATION	IMPORTANCE	OBS.		MEASUREMENTS					REMARKS
	DATE 1972 AUG	START	END	MAX. PHASE	APPROX. LAT.	APPROX. LONG. DIST.	CENTRAL DISTANCE	HOMATH PLAGE REGION	CMP DAY	MIN.		CONF.	TYPE	TIME UT	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH Hg	MAX. INT. %	
8 STATIONS REPORTING GROUP 45643. 3 STATIONS OBSERVING AND NOT REPORTING.																			
GRP45643	11	1218	1249	1222	N13	W88	.998	11976	4.9	31	1N				1.59				4 4 3 9
ATHN	11	1217E	1305	1224	N13	W90	1.000	11976	4.8	48D	2N	2	C						DE
HTPR	11	1218	1221	1219	N12	W90	1.000	11976	4.8	3	-N		C	1219	.52				A
CANR	11	1223E	1241	1223U	N15	W83	.989	11976	5.3	18D	1N	2	C	1223	.54				
ARCE	11	1230E	1308		N12	W90	1.000	11976	4.8	38D	2B		C	1230	3.71				H
45643	11	1234	1255	1236	N12	W90	1.000	11976	4.8	21	*1B				1.11				3 3 3 13
ABST	11	1232E	1306D	1237	N11	W90	1.000	11976	4.8	34D	1B		P	1237	1.35			98	AFKZ
HTPR	11	1234	1244	1237	N12	W90	1.000	11976	4.8	10	-N		C	1237	.83				A
CATA	11	1235	1240D	1235	N13	W90	1.000	11976	4.8	5D	1B		P	1235	1.16			(309)	
45643	11	1252	1314	1303	N10	W90	1.000	11976	4.8	22	*2B				1.47				2 2 1 13
CAPS	11	1216	1320D		N10	W90	1.000	11976	4.8	64D	3N	3	P						
ARCE	11	1252	1308	1303	N10	W90	1.000	11976	4.8	16	1B		C	1303	1.47				
45643	11	1217	1304	1247	N14	W90	1.000	11976	4.8	47	*1B								2 2 0 12
ATHN	11	1217E	1305	1248	N13	W90	1.000	11976	4.8	48D	1B	2	C						DE
HERS	11	1236E	1302	1245	N15	W90	1.000	11976	4.8	26D	2N		P	1252			2.90	54	Y
GRP45645	12	0253	0320	0257	N16	W71	.940	11987	6.8	27	-N				1.13				2 2 1 5
MITK	12	0253	0328	0257	N16	W71	.940	11987	6.8	35	1N		C	0257	1.13				E
CRON	12	0300E	0311		N16	W71	.940	11987	6.8	11D	-N	3	V						
CRON	12	0300E	0311		N16	W71	.940	11987	6.8	11D	-N	3	V						
GRP45648	12	0803	0852	0811	N14	W77	.970	11987	6.6	49	--N				.27				4 3 2 11
ISTA	12	0738	0916		N14	W77	.970	11987	6.5	106	-F								D
ARCE	12	0800E	0823D		N14	W75	.961	11987	6.7	23D	-B		C	0810	.33				
MONT	12	0806	0826	0811	N15	W78	.973	11987	6.5	22	-N		C	0811	.21				
ONDR	12	0815E	0842		N15	W80	.981	11987	6.3	27D	1F		V	0828			2.10		CEH
GRP45650	12	0937	0946	0939	N19	E20	.393	11985	13.9	9	--N				.77				3 3 3 13
ATHN	12	0936	0945	0939	N19	E19	.380	11985	13.8	9	-F	3	C		.66				F
MONT	12	0937	0949	0939	N19	E20	.393	11985	13.9	12	-N		C	0939	1.13				
ARCE	12	0940E	0945D		N18	E20	.385	11985	13.9	5D	-N		C	0940	.53	.60			H
GRP45653	12	1824	1831	1828	N15	W85	.994	11987	6.4	7	--F				.24				2 2 2 4
HUAN	12	1824	1838		N14	W85	.994	11987	6.4	6	-F	1	C	1826	.21				D
PALE	12	1824	1831	1828U	N15	W84	.992	11987	6.5	7	-N	2	C		.27				
GRP45661	13	1221	1232	1222	N17	W90	.999	11987	6.8	11	-N				.34				2 2 1 7
CATA	13	1220E	1235	1220	N18	W90	.999	11987	6.8	15D	-N		P	1220	.34			(151)	
MCMA	13	1222	1228	1223	N16	W90	1.000	11987	6.8	6	-N		C	1223					
GRP45662	14	0635	0659	0640	S09	E64	.911	11992	19.1	24	--F				.48				2 2 2 6
ATHN	14	0635	0705	0640	S08	E66	.923	11992	19.2	30	-F	3	C		.58				DE
CRON	14	0644E	0652		S10	E61	.891	11992	18.9	8D	-F	3	V	0644	.45				
CRON	14	0644E	0652		S10	E61	.891	11992	18.9	8D	-F	3	V		.45				
GRP45666	14	2014	2025	2016	S27	E77	.989	11993	20.6	11	--F				.36				2 2 1 4
HUAN	14	2013	2025	2015	S25	E78	.990	11993	20.7	12	-N	1	C	2015	.36				
MCMA	14	2014	2017D	2016	S28	E76	.987	11993	20.5	3D	-F		P	2016					D
GRP45667	15	0039	0042	0040	S12	W03	.323	11986	14.8	3	--F				.54				2 2 2 3
PALE	15	0039	0042D	0040	S12	W03	.323	11986	14.8	3D	-N	3	C		.36				
MITK	15	0039	0042	0040	S11	W03	.307	11986	14.8	3	-F		C	0040	.72	.80			D
8 STATIONS REPORTING GROUP 45669. 2 STATIONS OBSERVING AND NOT REPORTING.																			
GRP45669	15	0913	0937	0916	S10	E49	.783	11992	19.1	24	-N				.91				6 6 6 10
CANR	15	0910	0935	0915	S08	E52	.808	11992	19.3	25	-N	3	V		1.20	1.80			
TEHR	15	0911	0932	0917	S09	E47	.759	11992	18.9	21	-N	3	V		.56				F
CRON	15	0912E	0920D		S10	E49	.783	11992	19.1	8D	-F	2	V		.80				
CRON	15	0912E	0928U		S10	E49	.783	11992	19.1	8D	-F	2	V		.80				
CAPS	15	0913	0943D		S08	E50	.788	11992	19.1	30D	-N	3	V	0916	.05	.08		(170)	
CATA	15	0915	0935D	0915	S11	E49	.786	11992	19.1	20D	-B		P	0915	1.16	1.93		(240)	
KHAR	15	0915E	0948D		S12	E49	.798	11992	19.1	25D	1F		P	0922	1.70	2.80			DH
45669	15	0909	0953	0935	S10	E51	.803	11992	19.2	44	*-F				.52				2 2 1 11
ISTA	15	0905	0955		S09	E52	.818	11992	19.3	50	-N								EG
HTPR	15	0913	0950	0935	S11	E50	.796	11992	19.1	37	-F		C	0935	.52	.80			
GRP45678	15	1739	1812	1745	N03	E77	.973	11994	21.5	33	-B				.75				7 7 7 7
RAMY	15	1738	1743D	1741	N07	E75	.963	11994	21.4	5D	-B	3	C		.83				DE
MCMA	15	1739	1805	1743	N02	E78	.978	11994	21.6	26	-B		C	1743	.41	1.70			E
HUAN	15	1739	1817U		N04	E78	.977	11994	21.6	38D	-B	1	P	1746	.83				E
HTPR	15	1739	1752D		N04	E80	.984	11994	21.7	13D	1B			1750	1.34				
BOUL	15	1740U	1814	1743	S01	E74	.962	11994	21.3	34D	-N	1	C	1743	.54				
CANR	15	1743E	1815	1743U	S08	E76	.971	11994	21.4	32D	1N	2	C	1743	.75				
PALE	15	1752E	1808	1753U	N06	E75	.963	11994	21.4	16D	-B	2	C		.55				F

SOLAR FLARES
Confirmed
AUGUST 1972

OBSERV-ATORY	OBSERVED UT				LOCATION					DURA-TION	IM-POR-TANCE	OBS.		MEASUREMENTS					REMARKS
	DATE	START	END	MAX. PHASE	APPROX. LAT.	APPROX. MER. DIST.	CENTRAL DISTANCE	MCMATH PLAGE REGION	CMP DAY	MIN.		COND.	TYPE	TIME UT	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH Hα	MAX. INT. %	
	1972 AUG																		
671 MITK	16	0244	0259	0247	N16	E90	.999	11997	22.9	15	1F		C	0247	1.34				2
GRP45672	16	0256	0306	0257	N15	E09	.210	11989	16.8	10	-N				1.71				2 2 2 3
PALE	16	0256	0308	0257	N15	E09	.210	11989	16.8	12	-N	2	C		.64				F
MITK	16	0256	0303	0257	N14	E08	.186	11989	16.7	7	1N		C	0257	2.78	2.70			
GRP45674	16	0900	0919	0904	N14	E06	.163	11989	16.8	19	-N				1.81				8 8 7 9
CANR	16	0858	0916	0904	N14	E06	.163	11989	16.8	18	-N	2	V		.80	.80			
ATHN	16	0859	0918	0903	N14	E05	.153	11989	16.7	19	-N	3	C		.83				DE
CATA	16	0900	0920	0905	N14	E05	.153	11989	16.8	20	-B		C	0905	.98	.99		(219)	
ABST	16	0900E	0925	0903	N14	E05	.153	11989	16.8	25D	1B		P	0903	2.17	2.20		87	E
ISTA	16	0900	0915		N10	E10	.181	11989	17.1	15	-N								G
MONT	16	0902	0922	0904	N14	E07	.174	11989	16.9	20	-N		C	0904	1.55				
ARCE	16	0903E	0914D		N15	E05	.168	11989	16.8	11D	-B		C	0903	.69	.70			
CAPS	16	0906E	0917D		N15	E05	.168	11989	16.8	11D	-N	2	V	0908	.84	.84		(164)	
GRP45676	16	1520	1544	1529	N15	W29	.494	11985	14.5	24	--F				.59				4 4 4 8
CAPS	16	1510	1546D		N16	W28	.484	11985	14.5	36D	-N	3	V	1535	.89	.10		(171)	
HTPR	16	1517	1545	1525	N14	W30	.506	11985	14.4	28	-F		C	1525	.83	.90			E
HUAN	16	1525	1540	1528	N16	W28	.484	11985	14.5	15	-F	1	C	1528	.46	.53			E
ATHN	16	1527	1546	1534	N15	W30	.509	11985	14.4	19	-N	3	C		.99				F
679 HUAN	16	1814	1827	1816	N07	E85	.995	11994	23.1	13	--F	1	C	1816	.26				3
	16	2318	2323	NO FLARE PATROL															
681 PALE	17	0119	0135	0120	N07	E80	.983	11994	23.1	16	--F	3	C		.36				3
GRP45688	17	1426	1438	1429	N17	W43	.685	11985	14.4	12	--F				.33				2 2 1 4
HUAN	17	1426	1437		N16	W43	.683	11985	14.4	11	-F	1	C						
ATHN	17	1428E	1438	1429	N17	W42	.673	11985	14.5	10D	-F	3	V		.33				DE
689 ATHN	17	1610	1622	1613	N10	E73	.952	11994	23.1	12	-N	1	C		.50				DE 5
	17	1841	1851	NO FLARE PATROL															
	17	1902	1928	NO FLARE PATROL															
GRP45690	17	1959	2006	2000	S11	E17	.415	11992	19.1	7	--F				.24				2 2 2 2
MCMA	17	1959	2007	2000	S11	E16	.404	11992	19.0	8	-F		C	2000	.21	.20			D
PALE	17	2000E	2004	2000U	S10	E18	.415	11992	19.2	4D	-F	3	C		.27				
691 PALE	17	2032E	2045	2033U	N15	W46	.717	11985	14.4	13D	--F	3	C		.55				F 1
GRP45692	17	2100	2145	2103	N16	W47	.730	11985	14.4	45	-F				.71				2 2 2 2
BOUL	17	2100	2145	2100	N16	W46	.719	11985	14.4	45	-N	2	V	2100	.70	1.00			
PALE	17	2102E	2123D	2106U	N15	W47	.729	11985	14.4	21D	-F	3	V		.72				DE
GRP45697	18	0819	0831	0821	S13	E08	.363	11992	18.9	12	--N				.38				6 5 5 11
TEHR	18	0621E	0828	0623U	S10	E13	.361	11992	19.2	127D	-N	3	V		.37				DE H
ABST	18	0818	0830D	0822	S14	E07	.373	11992	18.9	12D	-N		P	0822	.90	1.00		96	D
HTPR	18	0818	0827	0822	S13	E07	.358	11992	18.9	9	-N		C	0822	.41	.40			
ARCE	18	0819E	0819D		S13	E08	.363	11992	18.9		-N		P	0819	.17	.20			H
MONT	18	0819	0825D	0820	S13	E09	.370	11992	19.0	6D	-N		C	0820	.21				H
CATA	18	0820	0835	0820	S12	E07	.342	11992	18.9	15	-N		C	0820	.23	.25		(166)	
GRP45700	18	1125	1134	1126	N16	W52	.784	11985	14.6	9	-N				.65				6 6 6 7
HTPR	18	1124	1132	1127	N16	W58	.843	11985	14.1	8	-N		C	1127	1.03	1.50			
ATHN	18	1124E	1135	1125	N16	W52	.784	11985	14.6	11D	-N	3	V		.50				DE
CAPS	18	1125E	1133D		N18	W50	.765	11985	14.7	8D	-N	2	V	1128	.84	.86		(176)	
CATA	18	1125	1130D	1125	N17	W50	.764	11985	14.7	5D	-N		P	1125	.69	1.08		(197)	
RAMY	18	1126E	1135	1126	N15	W50	.762	11985	14.7	9D	-F	3	V		.36				DE
ABST	18	1126	1135D	1128	N16	W51	.774	11985	14.7	9D	-F		P	1128	1.26	1.90			DZ
GRP45703	18	1320	1350	1326	N06	E39	.626	11994	21.5	30	--F				.47				4 4 4 9
MCMA	18	1320	1350	1325	N05	E38	.613	11994	21.4	30	-F		C	1325	.41	.58			EL
HUAN	18	1320	1345U	1326U	N05	E37	.600	11994	21.3	25D	-F	1	C	1326	.46	.55			E
ATHN	18	1325E	1349	1326	N06	E39	.626	11994	21.5	24D	-F	3	V		.50				DE
RAMY	18	1326E	1350	1326U	N06	E40	.639	11994	21.6	24D	-F	3	V		.52				DE
GRP45706	18	1725	1746	1731	N17	W54	.805	11985	14.7	21	-N				.65				6 6 5 7
BOUL	18	1724	1746	1733	N17	W53	.795	11985	14.8	22	-F	2	V						
RAMY	18	1724E	1744	1726U	N16	W53	.795	11985	14.8	20D	-N	3	V		.52				DE
MCMA	18	1725	1750D	1734	N17	W54	.805	11985	14.7	25D	-N		C	1734	.52	.90			EL
PALE	18	1725	1745	1727U	N16	W54	.805	11985	14.7	20	-N	2	C		.55				H
HTPR	18	1725	1744	1735	N16	W54	.805	11985	14.7	19	-N		C	1735	1.03	1.60			
HUAN	18	1725	1745		N17	W54	.805	11985	14.7	20	-N	1	C	1734	.62	1.03			E

SOLAR FLARES
Confirmed
AUGUST 1972

OBSERVATORY	OBSERVED UT DATE 1972 AUG	START	END	MAX. PHASE	LOCATION APPROX. LAT.	APPROX. MER. DIST.	CENTRAL DISTANCE	NOAA PLAGE REGION	CMP DAY	DURATION MIN.	IMPORTANCE		OBS. CONF.	OBS. TYPE	MEASUREMENTS TIME UT	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH Hg	MAX. INT. %	REMARKS
GRP45707	18	1817	1828	1821	N17	W54	.805	11985	14.7	11	--N					.35				4 4 4 5
PALE	18	1817	1829	1820	N16	W54	.805	11985	14.7	12	-N	2	C			.36				
RAMY	18	1817	1827	1819	N16	W54	.805	11985	14.7	10	-F	3	V			.41				DE
HUAN	18	1816	1829	1823	N17	W54	.805	11985	14.7	11	-N	1	C		1823	.41	.69			
MCMA	18	1821E	1822D		N17	W54	.805	11985	14.7	1D	-N		C		1822	.21	.30			E
710 PALE	18	2236	2250	2239	N16	W55	.815	11985	14.8	14	--N	3	C			.36				1
712 PALE	18	2321E	2335	2323U	N06	E35	.570	11994	21.6	140	-N	3	V			1.03				UDE 4
GRP45713	19	0024	0040	0028	N15	W59	.851	11985	14.6	16	-B					.98				2 2 2 5
MITK	19	0024	0044	0028	N16	W59	.852	11985	14.6	20	-N		C		0028	.93	1.80			D
VORO	19	0024	0036	0027	N13	W58	.842	11985	14.7	12	-B		C		0027	1.02	1.83		71	E
GRP45716	19	0548	0618	0551	N16	W61	.869	11985	14.7	22	--N					.44				4 4 4 8
MITK	19	0543	0608	0548	N15	W61	.869	11985	14.7	25	-N		C		0548	.72	1.40			E
ATHN	19	0547E	0602	0549	N15	W61	.869	11985	14.7	15D	-N	3	V			.50				DE
HTPR	19	0550	0608	0555	N16	W60	.860	11985	14.7	18	-F		C		0555	.31	.50			E
CATA	19	0550	0620	0550	N17	W60	.861	11985	14.7	30	-N		C		0550	.23	.46		(178)	
GRP45719	19	0700	0710	0702	N05	E29	.483	11994	21.5	10	--N					.81				6 6 5 8
ATHN	19	0659	0711	0701	N06	E30	.497	11994	21.5	12	-N	1	C			.50				DE
MITK	19	0700	0712	0702	N05	E28	.468	11994	21.4	12	-N		C		0702	.62	.70			E
HTPR	19	0700	0707	0701	N05	E29	.483	11994	21.5	7	-N		C		0701	.83	.90			
CAPS	19	0700E	0703D		N05	E27	.453	11994	21.3	3D	-N	2	S						(170)	
ABST	19	0701E	0712	0701	N05	E28	.468	11994	21.4	11D	-F		P		0701	1.80	2.00		68	E
MANI	19	0702E	0710	0703	N05	E30	.498	11994	21.5	8D	-F	1			0703	.31	.36			
GRP45721	19	0758	0840	0813	N05	E29	.483	11994	21.5	42	-N					1.75				5 5 4 6
HTPR	19	0757	0835	0813	N05	E28	.468	11994	21.4	38	-N		C		0813	1.34	1.30			W
ISTA	19	0757	0850		N06	E29	.482	11994	21.5	53	-N							8.14		A
MANI	19	0758E	0827	0815	N05	E29	.483	11994	21.5	29D	-N	1			0815	1.03	1.18			
ATHN	19	0758E	0839	0808	N05	E32	.528	11994	21.7	41D	-N	1			0808	2.07	2.03			
CATA	19	0800	0850	0815	N04	E27	.454	11994	21.4	50	1B		C		0815	2.55	2.86		(214)	
GRP45724	19	1121	1128	1121	S12	E90	1.000	12002	26.2	7	-F					.55				2 2 2 6
CATA	19	1120	1138	1120	S13	E90	1.000	12002	26.2	10	1F		C		1120	.69			(135)	
HTPR	19	1122	1125	1122	S10	E90	1.000	12002	26.2	3	-N		C		1122	.41				
GRP45725	19	1120	1139	1126	N17	W64	.893	11985	14.7	19	--F					.59				2 2 2 7
HTPR	19	1120	1137	1132	N16	W62	.877	11985	14.8	17	-F		C		1132	.31	.60			E
CATA	19	1120	1140	1120	N18	W65	.900	11985	14.6	20	-N		C		1120	.87	2.06		(174)	
GRP45727	19	1218	1253	1226	S05	E69	.939	12001	24.7	35	--F					.37				3 3 3 6
RAMY	19	1217	1227D	1222	S04	E68	.932	12001	24.6	10D	-F	3	C			.37				DE
HTPR	19	1219	1305	1225	S05	E68	.933	12001	24.6	46	-F		C		1225	.21				
ATHN	19	1231E	1240	1231	S07	E72	.957	12001	24.9	9D	-N	1			1231	.52	.66			
GRP45728	19	1250	1301	1251	N17	W64	.893	11985	14.7	11	--N					.45				2 2 2 6
HTPR	19	1250	1307	1251	N16	W63	.885	11985	14.8	17	-N		C		1251	.31	.60			E
CATA	19	1250	1255	1250	N17	W64	.893	11985	14.7	5	-N		C		1250	.58	1.32		(199)	
GRP45729	19	1313	1338	1316	S18	E90	1.001	12002	26.3	25	1N					.80				3 3 1 8
ATHN	19	1311E	1335	1316	S20	E90	1.001	12002	26.3	24D	1B	3			1316					
MCMA	19	1314E	1328D		S15	E90	1.000	12002	26.3	14D	-F		P		1316					
CATA	19	1315	1340	1315	S18	E90	1.001	12002	26.3	25	1N		C		1315	.80			(180)	
GRP45731	19	1432	1457	1437	N17	W67	.914	11985	14.6	25	1B					1.84				7 7 6 8
HTPR	19	1430	1450	1435	N16	W64	.892	11985	14.8	20	1N		C		1435	1.34	2.60			
MCMA	19	1431	1500	1435	N17	W68	.921	11985	14.5	29	1B		C		1435	1.24	3.50			E
ATHN	19	1432E	1504	1436	N18	W68	.921	11985	14.5	32D	-B	3			1436	1.21	1.81			
HUAN	19	1432	1447U		N16	W66	.907	11985	14.7	15D	-B	1	C							E
CANR	19	1433	1453	1436	N19	W66	.907	11985	14.7	20	1N	2	C		1436	1.72				
RAMY	19	1433E	1447D	1438U	N16	W67	.914	11985	14.6	14D	1N	1	C			1.76				F
CATA	19	1435	1500D	1440	N20	W67	.914	11985	14.6	25D	2B		P		1440	3.76			(292)	
735 HUAN	19	1839	1908	1841	S04	E67	.925	12001	24.8	29	--F	1	C		1841	.26				D 3
GRP45736	19	1923	2002	1925	N17	W69	.927	11985	14.6	39	--F					.26				2 2 2 2
HUAN	19	1923	2002U		N16	W68	.921	11985	14.7	39D	-F	1	C		1926	.31				K
MCMA	19	1923	1950D	1925	N17	W70	.933	11985	14.6	27D	-F		C		1925	.21	.68			O
737 HUAN	19	1933U	2011		S04	E66	.919	12001	24.8	38D	-N	1	C							E 2
GRP45738	19	2102	2129	2106	N17	W70	.933	11985	14.6	27	--F					.24				2 2 2 2
MCMA	19	2100	2123D		N17	W70	.933	11985	14.6	23D	-N		C		2105	.21	.60			O
HUAN	19	2103	2129U	2106U	N16	W70	.933	11985	14.6	26D	-F	1	C		2106	.26				O

SOLAR FLARES
Confirmed
AUGUST 1972

OBSERV-ATORY	OBSERVED UT				LOCATION					DURA-TION	IM-POR-TANCE	OBS.		MEASUREMENTS					REMARKS
	DATE	START	END	MAX. PHASE	APPROX. LAT.	APPROX. MER. DIST.	CENTRAL DISTANCE	MCMATH PLAGE REGION	CMP DAY	MIN.		CONF.	TYPE	TIME UT	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH Hg	MAX. INT. %	
	1972 AUG																		
GRP45739	19	2104	2125	2107	S08	E65	.917	12001	24.8	21	--N				.34				2 2 2 2
HUAN	19	2104	2125	2108	S07	E65	.916	12001	24.8	21	-N	1	C	2108	.26				D
MCMA	19	2104	2123D	2106	S08	E64	.910	12001	24.7	19D	-N		C	2106	.41	.90			
GRP45740	20	0055	0126	0058	N04	E17	.295	11994	21.3	31	-N				2.15				4 4 3 5
BOUL	20	0054	0108	0056	N04	E20	.344	11994	21.5	14	-N	2	V						
CULG	20	0054	0144	0100	N04	E17	.295	11994	21.3	50	1N		C	0100	3.20	3.25			L
MITK	20	0055	0127	0057	N03	E15	.266	11994	21.2	32	-N		C	0057	1.96	2.00			EG
CRON	20	0055E	0107D	0057	N04	E15	.262	11994	21.2	12D	-F	2	V	0057	1.30				
CRON	20	0055E	0107D	0057	N04	E15	.262	11994	21.2	12D	-F	2	V	0057	1.30				
GRP45741	20	0459	0508	0502	S04	E57	.847	12001	24.5	9	--F				.43				2 2 2 5
ATHN	20	0458	0510	0500	S02	E57	.844	12001	24.5	12	-F	1	C		.33				OE
MITK	20	0500	0506	0503	S05	E57	.849	12001	24.5	6	-N		C	0503	.52	1.00			D
GRP45745	20	1004	1019	1010	S18	E88	1.000	12002	27.0	15	-N				.36				5 5 3 8
HTPR	20	1001	1018	1010	S15	E90	1.000	12002	27.2	17	-F		C	1010	.31				
CATA	20	1005	1010D	1005	S17	E90	1.001	12002	27.2	5D	1N		P	1005	.58			(182)	
KHAR	20	1005	1020	1010	S17	E87	1.000	12002	26.9	15	1N		P						D
CAPS	20	1011E	1020D		S25	E88	1.000	12002	27.0	9D	-N	1	S						
TEHR	20	1012E	1019	1014U	S14	E85	.998	12002	26.8	7D	-N	3	V		.19				DE
GRP45747	20	1307	1312	1309	N13	W81	.984	11985	14.5	5	-N				.31				2 2 1 6
RAMY	20	1306	1312	1308	N12	W80	.981	11985	14.5	6	-N	4	V						DE
HTPR	20	1308	1312	1309	N13	W82	.987	11985	14.4	4	-N		C	1309	.31				
GRP45748	20	1427	1433	1428	N13	W81	.984	11985	14.5	6	--F				.24				3 3 2 6
RAMY	20	1426	1435	1428	N12	W80	.981	11985	14.6	9	-N	4	V						DE
HUAN	20	1427	1431	1428	N13	W80	.981	11985	14.6	4	-F	1	C	1428	.26				D
HTPR	20	1428	1432	1429	N13	W83	.989	11985	14.4	4	-F		C	1429	.21				
GRP45750	20	1809	1843	1811	S19	E86	1.000	12002	27.2	34	-N				.28				4 4 2 4
HUAN	20	1808	1843	1810	S20	E88	1.000	12002	27.4	35	-N	1	C	1810	.26				E
MCMA	20	1809	1835D	1811	S22	E88	1.000	12002	27.4	26D	1N		C						B
MCMA	20	1809	1835D	1833	S22	E88	1.000	12002	27.4	26D	1N		C						
CANR	20	1810	1830	1812	S16	E80	.991	12002	26.8	20	-N	2	V		.30	1.10			
BOUL	20	1812E	1905D	1812U	S19	E87	1.000	12002	27.3	53D	-N	2	V						
751 HUAN	20	1955	2014	2000U	S05	E50	.780	12001	24.6	19	--F	2	C	2000	.72	1.13			E 2
	20	2130	2228	NO FLARE PATROL															
	20	2331	2341	NO FLARE PATROL															
GRP45752	21	0814	0853	0835	S13	W33	.620	11992	18.9	39	--F				.45				3 2 2 6
ARCE	21	0813	0815D	0813	S13	W38	.585	11992	19.1	2D	-F		C	0813	.09	.10			
HTPR	21	0815	0900	0832	S13	W34	.632	11992	18.8	45	-F		C	0832	.31	.40			
ARCE	21	0820E	0850D		S13	W32	.609	11992	18.9	30D	-N		C	0825	.59	.70			
MONT	21	0838E	0850	0838	S11	W32	.595	11992	19.0	12D	-N		C	0838	1.13				
GRP45754	21	1108	1126	1110	S07	E46	.742	12001	24.9	18	--F				.27				3 3 2 9
ATHN	21	1107	1123	1109	S08	E47	.757	12001	25.0	16	-F	3	C		.33				DE
HTPR	21	1108	1130	1110	S06	E46	.739	12001	24.9	22	-F		C	1110	.21	.30			
KHAR	21	1110E	1124D		S08	E46	.746	12001	24.9	14D	-F		P						D
GRP45758	21	1705	1730	1709	S04	E38	.636	12001	24.6	25	-N				.79				3 3 3 5
HUAN	21	1705	1732	1709	S03	E38	.632	12001	24.6	27	-N	2	C	1709	.72	.94			E
HTPR	21	1705	1725	1708	S03	E38	.632	12001	24.6	20	-N		C	1708	1.03	1.20			
MCMA	21	1708E	1733		S05	E38	.639	12001	24.6	25D	-F		C	1714	.62	.80			E
GRP45759	21	1735	1753	1743	S19	E69	.955	12002	26.9	18	--N				.38				3 3 2 6
PALE	21	1710	1756	1747	S17	E70	.957	12002	27.0	46	-F	2	C		.45				F
HUAN	21	1734	1747	1739	S20	E69	.956	12002	26.9	13	-N	1	C						
HTPR	21	1736	1743D		S20	E67	.946	12002	26.8	7D	-N		C	1739	.31				
GRP45760	21	1927	1936	1928	S12	E60	.888	12002	26.3	9	--F				.24				2 2 2 4
HUAN	21	1926	1937	1928	S12	E60	.888	12002	26.3	11	-F	1	C	1928	.21	.43			D
PALE	21	1927	1935	1928	S11	E59	.878	12002	26.2	8	-F	2	C		.27				F
762 PALE	21	2206	2210	2207	S13	E59	.882	12002	26.3	4	--F	3	V		.31				2
GRP45764	21	2246	2258	2249	S14	E71	.959	12002	27.3	12	1B				1.87				4 4 4 4
BOUL	21	2246	2252	2248	S14	E75	.975	12002	27.6	6	-N	3	V	2248	.60	1.80			
CULG	21	2246	2307	2249	S14	E69	.949	12002	27.1	21	1B		C	2249	1.03				RV
VORO	21	2246	2255	2248	S13	E70	.953	12002	27.2	9	1B		C	2248	1.29	4.00		91	DJ
PALE	21	2247	2259	2249	S13	E68	.942	12002	27.0	12	1B	3	C		1.35				F

SOLAR FLARES
Confirmed
AUGUST 1972

OBSERVATORY	OBSERVED UT				LOCATION					DURATION	IMPORTANCE	OBS.		MEASUREMENTS					REMARKS
	DATE 1972 AUG	START	END	MAX. PHASE	APPROX. LAT.	APPROX. MER. DIST.	CENTRAL DISTANCE	McMATH PLAGE REGION	CMP DAY	MIN.		COND.	TYPE	TIME UT	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH Hα	MAX. INT. %	
GRP45766	21	2328	2334	2329	S02	E30	.519	12001	24.2	6	--B				.58				2 2 2 3
VORO	21	2327	2334	2329	S03	E28	.495	12001	24.1	7	-B		C	2329	.84	.97		65	D
PALE	21	2328	2333	2329	S01	E32	.543	12001	24.4	5	-N	3	V		.31				
GRP45767	22	0006	0013	0008	S02	E30	.519	12001	24.3	7	--N				.84				2 2 2 4
VORO	22	0006	0014	0008	S02	E28	.490	12001	24.1	8	-B		C	0008	.84	.94		64	D
PALE	22	0007E	0012	0008	S01	E32	.543	12001	24.4	5D	-F	3	V		.83				
771 PALE	22	0219E	0224D	0219U	S04	E18	.359	12001	23.4	5D	-N	2	V		1.24				F 3
GRP45772	22	0257	0309	0305	S26	W25	.655	11993	20.2	12	--F				.31				2 2 1 4
PALE	22	0257	0312	0305	S26	W25	.655	11993	20.2	15	-F	3	V		.31				F
CRON	22	0257E	0305		S25	W25	.645	11993	20.2	8D	-N	3	V						
CRON	22	0257E	0305		S25	W25	.645	11993	20.2	8D	-N	3	V						
8 STATIONS REPORTING GROUP 45779. 0 STATIONS OBSERVING AND NOT REPORTING.																			
GRP45779	22	1207	1335	1221	S23	E56	.886	12002	26.7	88	2B				3.86				4 4 4 7
ATHN	22	1202	1339D	1223	S20	E59	.898	12002	26.9	97D	2B	3	C		5.12				U F
HTPR	22	1207	1338	1223	S20	E56	.877	12002	26.7	83	2B		C	1223	4.13				AESU
CANR	22	1208	1337	1217	S22	E54	.868	12002	26.6	89	1N	2	C	1217	2.58	5.14			
KIEV	22	1210	1245	1219	S30	E56	.907	12002	26.7	35	2N		C	1219	3.61	8.20		65	EHI
45779	22	1205	1422	1238	S21	E56	.880	12002	26.7	137	*2N				3.13				4 3 3 8
CATA	22	1205E	1330D	1235	S22	E55	.876	12002	26.6	85D	2B		P	1235	4.40	8.81		(234)	
HUAN	22	1214E	1422		S20	E57	.884	12002	26.8	128D	2N	1	C	1228	2.42	5.12			U
CAPS	22	1215E	1340D		S13	E60	.890	12002	27.0	85D	2B	1	P	1221	5.00				
BOUL	22	1234E	1336D	1241	S22	E55	.876	12002	26.6	62D	1N	2	C	1241	2.58	4.94			
GRP45781	22	1311	1340	1317	S05	E25	.464	12001	24.4	29	-N				.89				3 3 2 7
HUAN	22	1304	1405	1318U	S05	E26	.478	12001	24.5	61	-N	1	C	1318	.62	.71			
BOUL	22	1308	1325	1312	S05	E24	.450	12001	24.3	17	-F	3	V						
CATA	22	1320	1330D	1320	S05	E26	.478	12001	24.5	10D	-N		P	1320	1.16	1.31		(178)	
GRP45784	22	1622	1644	1625	S19	E62	.916	12002	27.3	22	--F				.37				4 4 4 6
ATHN	22	1621	1643D	1627	S18	E58	.886	12002	27.0	22D	-F	1	C		.66				DE
MCMA	22	1622E	1645		S20	E62	.918	12002	27.3	23D	-F		C	1625	.21	.50			E
HTPR	22	1622	1646	1625	S18	E65	.932	12002	27.6	24	-F		C	1625	.21				E
HUAN	22	1622	1643	1624	S20	E63	.924	12002	27.4	21	-F	2	C	1624	.41				E
GRP45786	22	1706	1727	1710	S18	E66	.938	12002	27.7	21	--F				.18				2 2 2 5
HTPR	22	1705	1710D		S17	E64	.925	12002	27.5	5D	-F		C	1709	.10				
HUAN	22	1707	1727	1710	S18	E67	.943	12002	27.7	20	-F	2	C	1710	.26				E
GRP45787	22	1715	1729	1717	S04	E24	.444	12001	24.5	14	--N				.74				2 2 2 4
CANR	22	1714	1729		S04	E24	.444	12001	24.5	15	-N	2	W	1720	.68	.70			
HUAN	22	1715	1729	1717	S04	E23	.429	12001	24.4	14	-N	2	C	1717	.88	.96			E
GRP45790	22	2049	2104	2053	S06	E20	.403	12001	24.4	15	--N				.57				2 2 2 3
MCMA	22	2049	2104		S07	E20	.412	12001	24.4	15	-N		P	2049	.31	.40			E
HUAN	22	2049	2103	2053	S04	E20	.387	12001	24.4	14	-N	2	C	2053	.83	.90			E
GRP45791	23	0144	0219	0151	S04	E19	.373	12001	24.5	35	1N				3.18				5 5 5 7
CULG	23	0143	0225	0151	S04	E19	.373	12001	24.5	42	1N		C	0151	4.02	4.18			S
CRON	23	0143	0208D	0148	S03	E18	.351	12001	24.4	25D	-F	3	V		.90				
CRON	23	0143	0208D	0148	S03	E18	.351	12001	24.4	25D	-F	3	V		.90				
VORO	23	0144	0228	0147	S02	E20	.373	12001	24.6	36	1N		C	0147	4.71	5.81		72	EJ
MITK	23	0145	0213	0156	S05	E19	.381	12001	24.5	28	1N		C	0156	3.92	4.30			E
PALE	23	0153E	0159D	0154U	S04	E19	.373	12001	24.5	6D	1B	2	C		2.35				DE F
GRP45793	23	0457	0518	0501	S17	E50	.818	12002	27.0	21	-N				.91				3 3 3 5
ABST	23	0456	0527	0459	S18	E50	.822	12002	27.0	31	1N		P	0459	1.62	2.80		85	E
MANI	23	0457	0515	0502	S17	E49	.809	12002	26.9	18	-N	2		0502	.62	1.80			
ATHN	23	0459E	0512	0502	S16	E52	.832	12002	27.1	13D	-N	3	V		.50				DE
GRP45795	23	0634	0645	0635	S04	E11	.267	12001	24.1	11	--F				.32				2 2 2 6
ATHN	23	0634E	0645	0635	S04	E10	.256	12001	24.0	11D	-F	3	V		.33				DE
HTPR	23	0634	0644	0635	S04	E11	.267	12001	24.1	10	-F		C	0635	.31	.30			E
GRP45799	23	0822	0855	0835	S04	E13	.292	12001	24.3	33	--F				.22				2 2 2 5
HTPR	23	0822	0840	0835	S04	E12	.280	12001	24.2	18	-F		C	0835	.21	.20			
ARCE	23	0825E	0910D		S03	E13	.282	12001	24.3	45D	-N		C	0830	.23	.23			

SOLAR FLARES
Confirmed
AUGUST 1972

OBSERVATORY	OBSERVED UT DATE 1972 AUG	START	END	MAX. PHASE	LOCATION APPROX. LAT.	MER. DIST.	CENTRAL DISTANCE	MCMATH PLAGE REGION	CMP DAY	DURATION MIN.	IMPORTANCE	OBS. COND.	OBS. TYPE	MEASUREMENTS TIME UT	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH Hα	MAX. INT. %	REMARKS
8 STATIONS REPORTING GROUP 45800. 2 STATIONS OBSERVING AND NOT REPORTING.																			
GRP45800	23	0934	1003	0936	S16	E48	.796	12002	27.0	29	-N				1.24				6 6 6 9
ZURI	23	0932	1007	0933	S15	E47	.783	12002	26.9	35	-N		C	0933	.84	1.48			
HTPR	23	0933	1007	0936	S17	E49	.809	12002	27.1	34	-N		C	0936	.83	1.30			
ABST	23	0933	1001D	0937	S16	E49	.805	12002	27.1	28D	1N		P	0937	2.79	4.60		83	EJ
CATA	23	0935	1010	0935	S17	E47	.791	12002	26.9	35	-B		C	0935	.98	1.64		(209)	
CRON	23	0935E	0951		S17	E48	.800	12002	27.0	16D	-N	3	V		.80				
CRON	23	0935E	0951		S17	E48	.800	12002	27.0	16D	-N	3	V		.80				
CANR	23	0938	1000	0939	S14	E46	.769	12002	26.9	22	-N	3	V	0939	1.20	1.68			
45800	23	0936	0958	0940	S17	E59	.891	12002	27.8	22	*-N				.47				4 4 4 7
HTPR	23	0934	1009	0937	S17	E58	.884	12002	27.7	35	-F		C	0937	.21	.40			
CATA	23	0935	1000	0945	S17	E57	.876	12002	27.7	25	-B		C	0945	.17	.36		(209)	
ABST	23	0935	1001D	0938	S16	E59	.889	12002	27.8	26D	-N		P	0938	.90	1.90		68	DJ
CANR	23	0938	0941	0939	S19	E63	.922	12002	28.1	3	-F	3	V	0939	.60	.90			
45800	23	0938	1025	1000	S17	E48	.800	12002	27.0	47	*-F				.19				2 2 1 7
KHAR	23	0938E	1025D		S19	E47	.800	12002	26.9	47D	1F		V						D
TEHR	23	1000E	1005D	1000U	S15	E48	.792	12002	27.0	5D	-N	3	V		.19				DE
3 STATIONS REPORTING GROUP 45802. 0 STATIONS OBSERVING AND NOT REPORTING.																			
GRP45802	23	1910	1944	1915	S15	E42	.732	12002	26.9	34	-B				1.27				3 3 3 3
PALE	23	1909	1942	1915	S14	E42	.727	12002	26.9	33	1B	3	C		1.88				DE
RAMY	23	1910	1935	1914	S15	E42	.732	12002	26.9	25	-N	3	C		.93				F
HUAN	23	1911	1954	1915	S16	E43	.747	12002	27.0	43	-B	2	C	1915	1.08	1.59			EK
45802	23	1914	1934	1915	S17	E55	.861	12002	27.9	20	*-N				.46				2 2 2 3
RAMY	23	1913	1937	1915	S17	E56	.869	12002	28.0	24	-N	3	C		.46				DE
HUAN	23	1914	1930	1915	S17	E54	.853	12002	27.9	16	-N	2	C	1915	.46	.85			E
GRP45803	23	2007	2022	2009	S05	E14	.316	12001	24.9	15	--F				.21				2 2 2 4
HCMA	23	2006	2018D	2008	S05	E13	.303	12001	24.8	12D	-N		C	2008	.21	.20			D
HUAN	23	2008	2022	2010	S04	E14	.305	12001	24.9	14	-F	2	C	2010	.21	.22			D
	23	2101	2118	NO FLARE PATROL															
	23	2210	2222	NO FLARE PATROL															
	23	2303	2314	NO FLARE PATROL															
GRP45805	24	0301	0314	0304	S16	E38	.696	12002	27.0	13	--F				.60				3 3 3 8
PALE	24	0301E	0310	0301U	S15	E37	.679	12002	26.9	9D	-N	2	V		.62				DE
TEHR	24	0302E	0316	0303U	S17	E39	.712	12002	27.1	14D	-F	2	V		.65				DE
MANI	24	0306E	0315	0307	S15	E37	.679	12002	26.9	9D	-F	2		0307	.52	.78			
7 STATIONS REPORTING GROUP 45806. 0 STATIONS OBSERVING AND NOT REPORTING.																			
GRP45806	24	0345	0445	0355	S04	E05	.209	12001	24.5	60	2N				6.78				5 5 5 5
CULG	24	0343	0457	0355	S06	E06	.247	12001	24.6	74	2N		C	0355	6.29	6.10			
SIBE	24	0346	0441	0351	S03	E03	.181	12001	24.4	55	2N		C	0350	11.95	11.70	3.51	84	CE
TACH	24	0346	0440	0356	S04	E08	.235	12001	24.8	54	2N		C	0356	8.21	8.47		120	F
PALE	24	0351E	0408D	0353U	S04	E05	.209	12001	24.5	17D	1B	2	C		2.89				DE
TEHR	24	0351E	0442D	0401	S04	E04	.203	12001	24.5	51D	1N	2	V		4.56				U F
45806	24	0407	0443	0416	S06	E06	.247	12001	24.6	36	*1N				4.49				2 2 2 7
MITK	24	0407	0429D		S08	E06	.278	12001	24.6	22D	2N		P	0407	6.50	6.70			F
ATHN	24	0416E	0443	0416U	S04	E05	.209	12001	24.6	27D	1N	1	C		2.48				U F
GRP45807	24	0348	0425	0356	S15	E38	.690	12002	27.0	37	-N				1.03				4 3 3 5
SIBE	24	0345	0425	0351	S14	E38	.684	12002	27.0	40	1F		C	0350	1.92	2.40	3.51	55	C
TEHR	24	0350	0425	0400	S17	E39	.712	12002	27.1	35	-N	2	V		.65				DE
PALE	24	0351E	0410D	0356U	S15	E36	.668	12002	26.9	19D	-N	2	V		.52				DE
TACH	24	0407	0417	0411	S13	E40	.701	12002	27.2	10	-B		C	0411	1.09	1.49		88	E
GRP45812	24	0940	1035	1016	S17	E38	.702	12002	27.3	55	--F				.73				3 2 2 9
ARCE	24	0940E	1008D		S15	E36	.668	12002	27.1	28D	-N		C	0951	.42	.60			H
HTPR	24	0947	1040	1017	S16	E36	.674	12002	27.1	53	-F		C	1017	.62	.80			
ATHN	24	1008E	1030	1014	S17	E40	.722	12002	27.4	22D	-F	2	V		.83				DE
GRP45815	24	1149	1209	1154	S16	E34	.653	12002	27.0	20	--F				.62				4 4 4 8
HTPR	24	1147	1215	1153	S16	E35	.664	12002	27.1	28	-N		C	1153	.72	.90			
RAMY	24	1149	1212	1151	S16	E33	.642	12002	27.0	23	-F	3	C		.56				DE
ZURI	24	1151	1201	1153	S15	E33	.635	12002	27.0	10	-F		C	1153	.86	1.10			
ATHN	24	1159E	1209	1200	S17	E33	.649	12002	27.0	10D	-F	3	V		.33				DE
GRP45816	24	1316	1330	1319	S16	E34	.653	12002	27.1	14	--F				.37				3 3 3 6
RAMY	24	1316	1325D	1318U	S16	E33	.642	12002	27.0	9D	-F	2	C		.37				DE
HTPR	24	1316	1330	1320	S16	E34	.653	12002	27.1	14	-F		C	1320	.52	.68			E
HUAN	24	1317	1329	1318	S17	E34	.660	12002	27.1	12	-F	1	C	1318	.21	.27			O

SOLAR FLARES
Confirmed
AUGUST 1972

OBSERVATORY	OBSERVED UT DATE 1972 AUG	START	END	MAX. PHASE	LOCATION APPROX. LAT.	MER. DIST.	CENTRAL DISTANCE	NOAA PLAGE REGION	CMP DAY	DURATION MIN.	IMPORTANCE	OBS. COND.	TYPE	MEASUREMENTS TIME UT	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH HG	MAX. INT. %	REMARKS
GRP45817	24	1512	1532	1516	S27	W55	.892	11993	20.5	20	--N				.46				5 5 5 7
HUAN	24	1509	1528	1514	S27	W53	.879	11993	20.7	19	-F	1	C	1514	.31	.63			E
HTPR	24	1511	1535	1516	S27	W54	.886	11993	20.6	24	-F		C	1516	.21	.40			
MCMA	24	1511	1514D		S28	W56	.901	11993	20.4	3D	-N		C	1514	.41	1.00			E
ZURI	24	1513	1538	1515	S30	W54	.896	11993	20.6	17	-N		C	1515	.55				
ATHN	24	1515	1533	1517	S24	W68	.915	11993	20.1	18	-N	2	V		.83				F
GRP45818	24	1512	1531	1518	S16	E32	.631	12002	27.0	19	--N				.57				7 7 7 7
CANR	24	1504	1526		S13	E30	.586	12002	26.9	22	-N	2	V	1510	.70	.80			
MCMA	24	1512	1514D		S16	E31	.620	12002	27.0	2D	-N		C	1514	.31	.40			E
HUAN	24	1513	1538	1518	S17	E33	.649	12002	27.1	25	-N	2	C	1518	.46	.60			E
ZURI	24	1513	1530	1517	S15	E33	.635	12002	27.1	17	-F		C	1517	.71	.90			
RAMY	24	1514	1533	1518	S16	E32	.631	12002	27.0	19	-F	3	C		.46				DE
ATHN	24	1514E	1529	1515	S17	E32	.639	12002	27.0	15D	-N	2	V		.50				DE
HTPR	24	1515	1532	1520	S16	E32	.631	12002	27.0	17	-N		C	1520	.83	1.00			E
	24	2043	2117	NO FLARE PATROL															
	24	2123	2138	NO FLARE PATROL															
GRP45819	24	2132	2155	2134	S15	E29	.591	12002	27.1	23	-B				.99				3 2 2 3
RAMY	24	2130E	2200	2133	S15	E27	.568	12002	26.9	30D	-N	2	V		.77				DE
VORO	24	2133	2149	2135	S14	E30	.594	12002	27.1	16	-B		C	2135	1.20	1.40		115	D
MCMA	24	2145E	2155D		S16	E28	.588	12002	27.0	10D	-N		P	2146	.41	.50			E
GRP45820	25	0442	0501	0440	S05	E68	.933	12005	30.3	19	-N				1.17				5 5 5 5
TACH	25	0440	0500	0449	S04	E72	.955	12005	30.6	20	1N		C	0449	2.17			84	E
CRON	25	0442D	0501	0444	S05	E68	.933	12005	30.3	19D	-N	3	V	0444	.65				
CRON	25	0442E	0501	0444	S05	E68	.933	12005	30.3	19D	-N	3	V	0444	.65				
MANI	25	0443	0503	0450	S05	E68	.933	12005	30.3	20	-N	2		0450	.93	1.93			
TEHR	25	0447E	0457	0447U	S05	E67	.927	12005	30.2	10D	-N	3	V		.28				F
ABST	25	0452E	0507D	0452	S04	E67	.926	12005	30.2	15D	1B		P	0452	1.80			98	BE
ABST	25	0452E	0503	0452	S07	E66	.923	12005	30.2	11D	1B		P	0452	1.80			98	BE
7 STATIONS REPORTING GROUP 45821. 0 STATIONS OBSERVING AND NOT REPORTING.																			
GRP45821	25	0510	0542	0518	S15	E24	.536	12002	27.0	32	-N				1.89				6 6 6 6
MANI	25	0503E	0538	0514	S14	E22	.505	12002	26.9	35D	-F	2		0514	1.65	1.90			
CRON	25	0508	0548		S16	E26	.567	12002	27.2	32	-N	3	V		.80				
TACH	25	0510	0545		S13	E24	.517	12002	27.0	35	1N		P	0513	3.61	4.24		93	E
HTPR	25	0512E	0552		S16	E25	.556	12002	27.1	40D	1N		C	0523	1.96	2.20			E
ABST	25	0513E	0547D	0524	S16	E24	.546	12002	27.0	34D	1N		P	0524	2.97	3.50		89	E
TEHR	25	0514	0531	0517	S15	E22	.515	12002	26.9	17	-N	3	V		.37				DE
45821	25	0508	0548	0535	S16	E24	.546	12002	27.0	40	*-N				1.27				2 2 2 7
CRON	25	0508	0540		S16	E26	.567	12002	27.2	32	-N	3	V		.80				
CATA	25	0535E	0555D	0535	S15	E22	.515	12002	26.9	20D	-N		P	0535	1.73	2.01		(178)	
GRP45822	25	0709	0720	0711	S15	E23	.526	12002	27.0	11	--N				.39				3 3 3 7
CAPS	25	0708E	0727D		S13	E22	.495	12002	26.9	19D	-N	3	V	0710	.05	.06		(182)	
MONT	25	0709	0719	0710	S16	E22	.525	12002	26.9	10	-N		C	0710	.72				
HTPR	25	0709	0715	0711	S16	E24	.546	12002	27.1	6	-F		C	0711	.41	.40			E
GRP45823	25	0748	0756	0745	S15	E23	.526	12002	27.0	16	--N				.48				3 3 3 8
MONT	25	0739	0751	0744	S16	E22	.525	12002	27.0	12	-N		C	0744	.72				
HTPR	25	0740	0751	0745	S16	E24	.546	12002	27.1	11	-F		C	0745	.21	.20			E
CAPS	25	0743E	0805D		S13	E22	.495	12002	27.0	22D	-N	3	V	0745	.50	.60		(182)	C
11 STATIONS REPORTING GROUP 45827. 1 STATIONS OBSERVING AND NOT REPORTING.																			
GRP45827	25	1031	1118	1039	S16	E20	.506	12002	26.9	47	1B				2.78				11 11 11 12
MONT	25	1027	1126	1041	S16	E20	.506	12002	26.9	59	1B		C	1041	4.13				
CATA	25	1030	1145D	1035	S16	E19	.496	12002	26.9	75D	1B		P	1035	2.32	2.65		(278)	
HTPR	25	1030	1120	1044	S16	E23	.536	12002	27.2	58	1N		C	1044	2.06	2.30			E
ZURI	25	1030	1120	1037	S14	E18	.463	12002	26.8	50	-B		C	1037	1.72	2.00			
CANR	25	1030	1115	1036	S16	E21	.515	12002	27.0	45	-N	2	V		1.90	2.00			
CAPS	25	1031E	1129D		S16	E22	.525	12002	27.1	58D	1B	2	P	1036	2.50	3.00		(265)	CF
WEND	25	1032E	1106		S15	E21	.505	12002	27.0	34D	2N		P		6.19				
TEHR	25	1034	1053	1037	S15	E19	.485	12002	26.9	19	-B	3	V		1.55				F
KHAR	25	1035E	1115D		S17	E18	.499	12002	26.8	40D	2N		P	1043	5.10	5.90			
RAMY	25	1036E	1117	1036U	S15	E21	.505	12002	27.0	41D	-B	2	C		1.95				F
HERS	25	1042E	1111D	1042U	S16	E18	.487	12002	26.8	29D	-N		P	1046	1.19	1.40	1.90	58	E
827 TEHR	25	1037	1046	1039	S15	E31	.613	12002	27.8	9	*-F	3	V		.57				F 11
GRP45828	25	1125	1158	1138	N14	E87	.997	12007	1.0	33	1N				.52				3 3 1 7
CATA	25	1125	1145D	1140	N15	E90	.999	12007	1.2	20D	-N		P	1140	.52			(153)	
RAMY	25	1135E	1155	1135U	N15	E85	.993	12007	31.9	20D	-N	2	C						DE
KHAR	25	1142E	1200D		N12	E86	.996	12007	31.9	18D	2F		P						DH

SOLAR FLARES
Confirmed
AUGUST 1972

OBSERVATORY	OBSERVED UT DATE 1972 AUG	START	END	MAX. PHASE	LOCATION APPROX. LAT.	APPROX. MER. DIST.	CENTRAL DISTANCE	MCMATH PLAGE REGION	CMP DAY	DURATION MIN.	IMPORTANCE	OBS. COND.	OBS. TYPE	MEASUREMENTS TIME UT	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH Ha	MAX. INT. %	REMARKS
GRP45829	25	1224	1239	1226	S04	W15	.319	12001	24.4	15	--N				.33				3 3 3 7
MCMA	25	1223	1234	1226	S05	W16	.342	12001	24.3	11	-N		C	1226	.41	.40			EH
RAMY	25	1225	1233	1226	S04	W16	.332	12001	24.3	8	-F	2	C		.28				DE
CAPS	25	1227E	12500		S04	W12	.280	12001	24.6	23D	-N	2	V	1228	.30	.30		(170)	C
GRP45830	25	1233	1255	1238	N09	E85	.995	12007	31.9	22	-B				.67				8 8 5 9
HTPR	25	1230	1255	1237	N08	E85	.995	12007	31.9	25	-B		C	1237	.72				E
MCMA	25	1231	1300	1235	N08	E88	.999	12007	1.1	29	-B		C	1235					EK
RAMY	25	1231E	1253D	1234	N09	E90	1.000	12007	1.3	22D	-B	2	V						DE
CANR	25	1231	1254	1237	N07	E83	.991	12007	31.7	23	1N	2	C	1237	.75				
ZURI	25	1233	1247	1235	N08	E85	.995	12007	31.9	14	1N		C	1235	.53				
CATA	25	1235	1300	1235	N08	E85	.995	12007	31.9	25	1B		C	1235	.75			(251)	
BOUL	25	1240	1257	1245	N08	E80	.982	12007	31.5	17	-B	2	V						
HERS	25	1244E	12540	1244U	N11	E81	.984	12007	31.6	10D	1N		P	1244	.60	2.90			D
BOUL	25	1245	1304	1248	N15	E85	.993	12007	31.9	19	-N	2	V						
	25	2408	0000	NO FLARE PATROL															
	26	0107	0120	NO FLARE PATROL															
	26	0220	0243	NO FLARE PATROL															
	26	0257	0300	NO FLARE PATROL															
GRP45835	26	0534	0545	0536	S16	E08	.413	12002	26.8	11	--F				1.22				2 2 2 5
ABST	26	0533	05440	0536	S16	E08	.413	12002	26.8	11D	-F		P	0536	1.80	2.00		74	E
CATA	26	0535	0545	0535	S16	E08	.413	12002	26.8	10	-N		C	0535	.63	.70		(199)	
GRP45836	26	0718	0736	0722	S04	E55	.829	12005	30.4	18	-N				1.11				3 3 3 9
ABST	26	0717	07340	0721	S05	E54	.821	12005	30.4	17D	1F		P	0721	1.71	2.90		82	E
CAPS	26	0719E	07400		S04	E54	.819	12005	30.4	21D	-N	4	V	0720	.50	.90		(170)	C
MONT	26	0719	0734	0722	S04	E56	.838	12005	30.5	15	-N		C	0722	1.13				
GRP45839	26	1046	1117	1052	N10	E74	.957	12007	1.0	31	-N				.48				4 4 4 7
CATA	26	1045	1115	1050	N09	E72	.947	12007	31.8	30	-N		C	1050	.58			(195)	
MONT	26	1046	1119	1051	N11	E75	.961	12007	1.1	33	-B		C	1051	.72				
HTPR	26	1049E	1117	1055	N10	E75	.962	12007	1.1	28D	-F		C	1055	.31				
CAPS	26	1050E	11160		N09	E75	.962	12007	1.1	26D	-B	3	P	1051	.38			(188)	C
GRP45840	26	1202	1209	1205	N11	E62	.877	12007	31.2	7	--N				.46				4 4 4 7
ZURI	26	1200	1207	1201	N11	E64	.893	12007	31.3	7	-N		C	1201	.53	1.10			
HTPR	26	1200	1206	1201	N13	E62	.876	12007	31.1	6	-N		C	1201	.41	.80			
CAPS	26	1203E	12090		N09	E62	.878	12007	31.2	6D	-F	3	V	1206	.50				C
CATA	26	1205	1215	1205	N11	E61	.868	12007	31.1	10	-N		C	1205	.40	.84		(162)	
843 PALE	26	1742	1755	1746	S14	E04	.365	12002	27.0	13	--F	3	C		.55				F 3
GRP45844	26	1825	1854	1831	S06	W31	.553	12001	24.4	29	--N				.49				3 3 2 3
PALE	26	1821	1847	1832	S06	W30	.540	12001	24.5	26	-N	3	C		.36				F
BOUL	26	1829	1856	1829	S06	W32	.566	12001	24.4	27	-N	2	V						
MCMA	26	1837E	19000		S05	W32	.561	12001	24.4	23D	-F		C	1839	.62	.70			E
845 MCMA	26	1943	19550	1948	S05	W32	.561	12001	24.4	12D	--N		C	1948	.26	.30			D 2
GRP45848	27	0122	0150	0129	N18	E88	.997	12011	2.7	28	-B				.54				2 2 2 5
MANI	27	0120	0150	0129	N18	E88	.997	12011	2.7	30	-N	2		0129	.62	1.91			
PALE	27	0124	01430	0129	N17	E88	.998	12011	2.7	19D	-B	2	C		.45				
GRP45849	27	0220	0238	0225	S06	E44	.717	12005	30.4	18	--F				.69				3 3 3 6
MANI	27	0218	0245	0226	S06	E43	.705	12005	30.3	27	-F	2		0226	.62	.91			
PALE	27	0222	0236	0224	S04	E45	.722	12005	30.5	14	-F	2	C		.63				F
MITK	27	0224E	0233	0225	S07	E44	.720	12005	30.4	9D	-N		C	0225	.83	1.20			E
GRP45853	27	0547	0558	0549	S14	W04	.366	12002	26.9	11	--F				.51				4 4 4 7
TEHR	27	0545	0555	0547	S14	W05	.369	12002	26.9	10	-F	3	V		.19				F
ATHN	27	0547	0558	0549	S14	W02	.361	12002	27.1	11	-N	3	C		.50				DE
MANI	27	0548E	0603	0551	S14	W04	.366	12002	26.9	15D	-F	1		0551	.72	.76			
MITK	27	0548	0555	0550	S15	W03	.379	12002	27.0	7	-F		C	0550	.62	.60			E
GRP45856	27	0935	0955	0940	S07	E38	.649	12005	30.2	20	--N				.40				2 1 1 7
CATA	27	0935	0955	0940	S07	E38	.649	12005	30.2	20	-N		C	0940	.40	.53		(170)	
ARCE	27	0951E	10000		S05	E40	.665	12005	30.4	9D	-F		C	0955	.42	.50			
GRP45858	27	1017	1044	1022	N14	E81	.984	12011	2.5	27	1N				1.67				5 5 5 6
CATA	27	1015	1040	1020	N14	E85	.994	12011	2.8	25	1B		C	1020	1.27			(211)	
CANR	27	1016	1037	1025	N11	E83	.990	12011	2.7	21	1F	2	C	1025	.54				
WEND	27	1018E	1054	1022	N16	E88	.980	12011	2.4	36D	1N		V		5.16				
ATHN	27	1018	1037	1023	N14	E79	.977	12011	2.4	19	-N	3	C		.66				F
TEHR	27	1018E	1050	1022	N13	E80	.981	12011	2.4	32D	-N	3	V		.73				F

SOLAR FLARES
Confirmed
AUGUST 1972

OBSERVATORY	OBSERVED UT DATE 1972 AUG	START	END	MAX. PHASE	LOCATION APPROX. LAT.	APPROX. MER. DIST.	CENTRAL DISTANCE	MCMATH PLAGE REGION	CMP DAY	DURATION MIN.	IMPORTANCE	CONF.	TYPE	MEASUREMENTS TIME UT	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH Ha	MAX. INT. %	REMARKS
GRP45860	27	1124	1129	1125	N17	E77	.968	12011	2.3	5	-N				.43				3 3 3 6
RAMY	27	1121	1126	1124	N17	E79	.976	12011	2.4	5	-F	2	C		.28				DE
RAMY	27	1122E	1128		N16	E80	.980	12011	2.5	6D	-F	2	V						DE
CAPS	27	1124E	1138D		N18	E75	.959	12011	2.1	6D	-N	3	V	1125	.50				C
CATA	27	1125	1130	1125	N16	E76	.964	12011	2.2	5	-N		C	1125	.52			(162)	
GRP45863	27	1715	1730	1718	N17	E76	.964	12011	2.4	15	-F				.47				3 3 3 6
PALE	27	1712	1731	1717	N17	E76	.964	12011	2.4	19	-N	3	C		.45				
RAMY	27	1716	1731	1718	N17	E76	.964	12011	2.4	15	-F	3	C		.37				DE
BOUL	27	1718	1728	1720	N17	E77	.968	12011	2.5	10	-F	3	V	1720	.60	1.90			
GRP45864	27	1746	1814	1805	N17	E77	.968	12011	2.5	28	-N				.55				4 4 4 5
PALE	27	1745	1811	1804	N17	E78	.972	12011	2.6	26	1B	4	V		.93				
PALE	27	1745	1811	1747	N17	E78	.972	12011	2.6	26	-N	4	V		.31				
HUAN	27	1746	1810	1805U	N17	E77	.968	12011	2.5	24	-N	1	C	1805	.31				
RAMY	27	1750E	1811	1803	N17	E76	.964	12011	2.4	21D	-N	2	C		.37				DE
BOUL	27	1808E	1823	1808U	N17	E77	.968	12011	2.5	15D	-F	3	V	1810	.60	1.90			
	27	2033	2107	NO FLARE PATROL															
	27	2220	2230	NO FLARE PATROL															
GRP45867	28	0105	0129	0115	S18	W01	.425	12002	28.0	24	--F				.75				2 2 2 4
MANI	28	0105	0138	0111	S18	W01	.425	12002	28.0	25	-F	2		0111	.93	1.03			
PALE	28	0110E	0127	0119U	S18	W01	.425	12002	28.0	9D	-F	2	V		.57				F
GRP45870	28	0420	0445	0425	S17	W04	.414	12002	27.9	25	-N				1.61				3 3 3 4
VORO	28	0420	0449	0425	S17	W04	.414	12002	27.9	29	1N		C	0425	2.03	2.20		65	D
TACH	28	0420	0440	0425	S17	W04	.414	12002	27.9	20	-N		C	0425	2.09	2.32		60	E
CRON	28	0426E	0447		S17	W03	.411	12002	28.0	21D	-N	3	V		.70				
CRON	28	0426E	0447		S17	W03	.411	12002	28.0	21D	-N	3	V		.70				
GRP45875	28	0809	0827	0818	S07	W27	.506	12015	26.3	18	--N				.32				7 6 5 10
ATHN	28	0809	0826	0811	S07	W28	.519	12015	26.2	17	-N	3	C		.33				DE
ISTA	28	0809	0821		S06	W25	.472	12015	26.5	12	-N								D
CAPS	28	0810E	0831D		S07	W27	.506	12015	26.3	21D	-N	2	V	0821	.48	.50			C
CRON	28	0814E	0824	0816U	S07	W26	.493	12015	26.4	10D	-N	3	V	0816	.30				
CRON	28	0814E	0824	0816	S07	W26	.493	12015	26.4	10D	-N	3	V	0816	.30				
ARCE	28	0815E	0824D		S08	W27	.513	12015	26.3	9D	-B		C	0815	.36	.40			
MONT	28	0821E	0830	0821	S09	W26	.508	12015	26.4	9D	-N		C	0821	.21				
CATA	28	0825E	0835D	0825	S07	W28	.519	12015	26.3	10D	-N		P	0825	.29	.33		(162)	
3 STATIONS REPORTING GROUP 45877. 5 STATIONS OBSERVING AND NOT REPORTING.																			
GRP45877	28	0859	0913	0903	N14	E68	.921	12011	2.5	14	--N				.36				3 3 3 8
CRON	28	0859E	0909	0900	N14	E68	.921	12011	2.5	10D	-N	3	V	0900	.55				
CRON	28	0859E	0929	0900	N14	E68	.921	12011	2.5	30D	-N	3	V	0900	.55				
ARCE	28	0900E	0915D		N16	E67	.914	12011	2.4	15D	-N		P	0900	.28	.50			H
ATHN	28	0905E	0915	0905U	N13	E68	.921	12011	2.5	10D	-F	3	V		.33				DE
877 ARCE	28	0850E	0905D		N20	E71	.938	12011	2.7	15D	*-F		C	0855	.86				8
GRP45879	28	0947	0953	0948	S15	W19	.485	12002	27.8	6	--F				.47				4 4 3 6
CATA	28	0945	0958	0945	S15	W20	.495	12002	26.9	5	-N		C	0945	.58	.66		(151)	
CAPS	28	0947	0955D		S13	W18	.453	12002	27.1	8D	-F	3	V	0948	.50	.60			
ATHN	28	0947E	0954	0948	S16	W20	.507	12002	26.9	7D	-N	3	V		.33				DE
ISTA	28	0947	0951		S17	W18	.499	12002	27.1	4	-F								E
GRP45880	28	1015	1044	1025	S07	W29	.533	12015	26.3	29	--F				.56				2 2 2 4
CATA	28	1015	1040D	1025	S06	W28	.513	12015	26.3	25D	-N		P	1025	.46	.54		(162)	
ATHN	28	1024E	1044	1024U	S08	W29	.539	12015	26.3	20D	-F	3	V		.66				DE
5 STATIONS REPORTING GROUP 45881. 8 STATIONS OBSERVING AND NOT REPORTING.																			
GRP45881	28	1105	1210	1112	S03	W54	.817	12001	24.4	65	1N				2.69				4 4 3 5
CANR	28	1105	1205	1112	S02	W53	.806	12001	24.5	60	1N	2	C	1112	1.72	2.21			
MONT	28	1108E	1141D	1112	S04	W52	.799	12001	24.6	33D	1B		C	1112	4.54				H
RAMY	28	1109E	1113D		S03	W56	.837	12001	24.3	4D	-F	2	V						DE
ATHN	28	1110E	1214	1113	S04	W54	.819	12001	24.4	64D	1N	3	V		1.82				F
45881	28	1110	1200	1130	S02	W53	.806	12001	24.5	50	*1N				2.02				2 1 1 5
CATA	28	1110E	1200D	1130	S02	W53	.806	12001	24.5	50D	1N		P	1130	2.02	3.37		(204)	
RAMY	28	1149E	1158	1150	S03	W56	.837	12001	24.3	9D	-N	2	C		.56				DE
GRP45883	28	1130	1151	1137	N14	E66	.907	12011	2.4	21	-N				1.84				5 5 5 5
ATHN	28	1129E	1151	1142	N12	E67	.914	12011	2.5	22D	-N	1		1143	.85	1.31			
CANR	28	1130	1150	1133	N14	E65	.900	12011	2.4	20	-N	3	V		.58	1.10			
CATA	28	1130	1145D	1140	N14	E65	.900	12011	2.4	15D	1N		P	1140	1.27	3.02		(186)	
MONT	28	1130	1141D	1132	N15	E68	.920	12011	2.6	11D	-B		C	1132	1.86				
RAMY	28	1137E	1152D	1140	N15	E66	.907	12011	2.4	15D	-N	2	C		.74				DE

SOLAR FLARES
Confirmed
AUGUST 1972

OBSERV-ATORY	OBSERVED UT				LOCATION					DURATION	IMPORTANCE	OBS.		MEASUREMENTS					REMARKS
	DATE 1972 AUG	START	END	MAX. PHASE	APPROX. LAT.	APPROX. MER. DIST.	CENTRAL DISTANCE	MCMATH PLAGE REGION	CMP DAY	MIN.		COND.	TYPE	TIME UT	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH Hg	MAX. INT. %	
GRP45885	28	1404	1413	1407	N17	E64	.892	12011	2.4	9	--N				.46				6 6 6 8
MCMA	28	1402	1414	1407	N17	E65	.899	12011	2.5	12	-N		C	1407	.41	1.00			E
HTPR	28	1403	1413	1408	N18	E65	.899	12011	2.5	10	-F		C	1408	.31	.70			
HUAN	28	1404	1412	1407	N18	E65	.899	12011	2.5	8	-N	1	C	1407	.31				
ATHN	28	1404E	1414	1409	N15	E64	.892	12011	2.4	10D	-N	1		1409	.52	.78			
CATA	28	1405	1410	1405	N16	E63	.884	12011	2.3	5	-N		C	1405	.63	1.41		(182)	
BOUL	28	1405	1414	1408	N17	E62	.876	12011	2.2	9	-F	3	V	1408	.60	1.20			
GRP45886	28	1407	1427	1411	N12	E52	.782	12007	1.5	20	--F				.49				5 5 4 9
BOUL	28	1406	1434	1412	N14	E52	.782	12007	1.5	28	-F	3	V	1412					
MCMA	28	1407	1425	1412	N12	E51	.771	12007	1.4	18	-N		C	1412	.41	.70			E
HUAN	28	1407	1428U	1411U	N13	E51	.771	12007	1.4	13D	-F	1	C	1411	.52	.80			E
HTPR	28	1407	1421	1411	N13	E52	.782	12007	1.5	14	-F		C	1411	.52	.80			
ATHN	28	1409E	1426	1409	N08	E52	.783	12007	1.5	17D	-N	1		1409	.52	.64			
GRP45888	28	1500	1521	1504	N15	E63	.884	12011	2.4	21	-N				.78				4 4 3 7
BOUL	28	1458	1527	1506	N14	E62	.876	12011	2.3	29	-N	3	V						
RAHY	28	1500E	1511	1502U	N16	E65	.899	12011	2.5	11D	-N	4	V		.66				DE
MCMA	28	1500	1527		N14	E63	.884	12011	2.3	27	-N		C	1504	.41	1.00			E
LOCA	28	1500E	1520	1503	N14	E63	.884	12011	2.3	20D	1N		V	1503	1.26	3.20			
GRP45890	28	1640	1658	1645	S25	E90	1.001	12014	4.4	18	-B								2 2 0 4
MCMA	28	1640	1655	1646	S27	E89	1.001	12014	4.4	15	-N		C	1646					D
RAHY	28	1644E	1700D	1644U	S22	E90	1.001	12014	4.4	16D	-B	3	V						
GRP45891	28	1659	1728	1708	N14	E62	.876	12011	2.4	29	-N				.58				5 5 4 6
MCMA	28	1656	1730	1707	N14	E61	.868	12011	2.3	34	-N		C	1707	.52	1.10			E
BOUL	28	1702	1732	1708	N14	E62	.876	12011	2.4	30	-N	3	V						
RAHY	28	1703E	1725	1704	N15	E62	.876	12011	2.4	22D	-N	3	V		.46				DE
HUAN	28	1709E	1728		N14	E64	.892	12011	2.5	19D	-N	1	P	1709	.52	1.04			E
PALE	28	1710E	1724	1711U	N15	E60	.859	12011	2.2	14D	-N	3	V		.83				DE
GRP45894	28	1948	2015	1951	S07	E20	.414	12005	30.3	27	--F				.31				2 1 1 4
MCMA	28	1948	2015	1951	S07	E20	.414	12005	30.3	27	-F		C	1951	.31	.30			D
HUAN	28	2003E	2017		S06	E21	.418	12005	30.4	14D	-F	1	C	2005	.26	.28			
GRP45895	28	2021	2045	2034	N14	E60	.859	12011	2.3	24	--N				.36				3 3 3 4
RAHY	28	2016	2046	2032	N15	E60	.859	12011	2.3	30	-N	3	V		.46				DE
HUAN	28	2016	2024	2017	N15	E62	.876	12011	2.5	8	-F	1	C						
MCMA	28	2031	2044	2035	N14	E58	.842	12011	2.2	13	-N		C	2035	.21	.40			E
HUAN	28	2032	2032D		N14	E61	.868	12011	2.4		-F	1	P	2032	.41	.81			E
	28	2223	2241	NO FLARE PATROL															
896 PALE	29	0123	0130	0123	S07	E12	.318	12005	30.0	7	--N	3	C		.55				F 3
GRP45897	29	0150	0226	0153	S08	W35	.616	12015	26.5	36	-B				.96				3 2 2 4
PALE	29	0150	0203	0151	S08	W35	.616	12015	26.5	13	-N	3	C		.45				F
VORO	29	0150	0248	0154	S08	W34	.604	12015	26.5	58	-B		C	0154	1.47	1.89		73	EJ
KODA	29	0211	0233	0221	S08	W38	.653	12015	26.2	22	1B		P	0219	2.98	3.00	1.40		
GRP45898	29	0240	0255	0242	N16	E57	.833	12011	2.4	15	-B				.96				3 3 3 4
PALE	29	0204	0300	0242	N16	E56	.823	12011	2.3	56	-B	2	C		.91				F
CRON	29	0240	0252	0241	N14	E57	.832	12011	2.4	12	-B	3	V	0241	.60				
CRON	29	0240	0252	0241	N14	E57	.832	12011	2.4	12	-B	3	V	0241	.60				
VORO	29	0241	0252	0242	N18	E58	.843	12011	2.5	11	1B		C	0242	1.38	2.57		91	E
GRP45901	29	0456	0514	0501	S06	E10	.284	12005	30.8	18	--F				.93				3 2 2 5
ABST	29	0455E	0518	0459	S05	E09	.260	12005	29.9	23D	-F		P	0459	1.35	1.40		65	E
CRON	29	0456	0503	0457	S06	E11	.294	12005	30.0	7	-N	3	V	0457	.50				
CRON	29	0456	0503	0457	S06	E11	.294	12005	30.0	7	-N	3	V	0457	.50				
ATHN	29	0506E	0520	0506	S06	E12	.305	12005	30.1	14D	-F	1		0506	.68	.64			
GRP45904	29	0745	0806	0750	N15	E79	.977	12011	4.2	21	--F				.74				4 3 2 10
ISTA	29	0740	0800		N16	E78	.973	12011	4.2	20	-F								D
ATHN	29	0746E	0808	0746	N13	E80	.981	12011	4.3	22D	-F	1		0746	.34	.74			
MONT	29	0749	0812	0754	N15	E80	.980	12011	4.3	23	-N		C	0754	1.13				
CRON	29	0756E	0802		N14	E74	.955	12011	3.9	6D	-F	3	V		.70				
CRON	29	0756E	0802		N14	E74	.955	12011	3.9	6D	-F	3	V		.20				
GRP45905	29	0747	0816	0759	S13	W38	.679	12002	26.5	29	-N				.97				3 3 3 9
MONT	29	0746E	0829	0759	S14	W39	.696	12002	26.4	43D	-B		C	0759	.72				
ABST	29	0747	0758D	0758	S13	W40	.701	12002	26.3	11D	1F		P	0758	1.80	2.50		66	E
CRON	29	0756E	0803		S12	W35	.639	12002	26.7	7D	-F				.40				
CRON	29	0756E	0803		S12	W35	.639	12002	26.7	7D	-F	3	V		.40				

SOLAR FLARES
Confirmed
AUGUST 1972

OBSERVATORY	OBSERVED UT				LOCATION					DURATION MIN.	IMPORTANCE		OBS. CONF.	OBS. TYPE	MEASUREMENTS					REMARKS
	DATE 1972 AUG	START	END	MAX. PHASE	APPROX. LAT.	APPROX. MER. DIST.	CENTRAL DISTANCE	MCMATH PLAGE REGION	CMP DAY						TIME — UT	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH Hα	MAX. INT. %	
GRP45906	29	0809	0834	0815	S26	E74	.982	12014	3.9	25	-B					.47				10 10 7 11
ZURI	29	0808	0836	0816	S26	E69	.964	12014	3.5	28	-B		C		0816	.53				
MONT	29	0808	0844	0817	S28	E78	.992	12014	4.2	36	-B		C		0817	.52				
CANR	29	0809	0830	0815	S27	E73	.979	12014	3.8	21	-N	3	V			.50	1.30			
CRON	29	0809E	0834	0810	S25	E78	.991	12014	4.2	25D	-B				0810	.45				
CRON	29	0809E	0834	0810	S25	E78	.991	12014	4.2	25D	-B	3	V		0810	.45				
BUCA	29	0810	0830		S25	E73	.978	12014	3.8	20	-N		C		0817	.55				
ONDR	29	0810E	0826		S27	E75	.985	12014	4.0	16D	1B		V		0812			3.50		CE
ISTA	29	0810	0825		S24	E73	.977	12014	3.8	15	-N									E
UPIC	29	0811	0841	0817	S26	E78	.991	12014	4.2	30	1B		C							
ATHN	29	0812E	0838	0815	S27	E72	.976	12014	3.7	26D	-N	1			0815	.52	1.26			
HTPR	29	0815E	0835D	0815	S28	E75	.986	12014	4.0	20D	-N		C		0815	.21				E
GRP45907	29	0814	0908	0820	S12	W40	.696	12015	26.3	54	--F					.75				6 5 4 11
MONT	29	0753	0925	0826	S09	W41	.694	12015	26.3	92	-N		C		0826	1.13				
ZURI	29	0810	0912	0820	S11	W41	.783	12015	26.3	62	-N		C		0820	.99	1.30			
ATHN	29	0813E	0847	0813	S14	W40	.707	12015	26.3	34D	-F	1			0813	.68	.76			
HTPR	29	0815E	0835D	0823	S14	W39	.696	12015	26.4	20D	-F		C		0823	.21	.30			
UPIC	29	0816	0907	0820	S14	W38	.685	12015	26.5	51	-F		G							
KODA	29	0820E	0833D	0833	S07	W38	.649	12015	26.5	5D	-N		V		0828	1.71	1.70	1.40		D
GRP45910	29	0955	1003	0958	N14	E54	.803	12011	2.5	8	--N					.53				3 3 2 7
ZURI	29	0955	1004	0958	N15	E51	.772	12011	2.2	9	-N		C		0958	.53	.80			
ATHN	29	0956E	1003	0957	N13	E54	.803	12011	2.5	7D	-N	1			0957	.52	.78			
ONDR	29	0956E	1002		N14	E56	.823	12011	2.6	6D	-N		V		0958			2.00		CD
GRP45914	29	1142	1224	1145	N11	W83	.990	11994	23.3	42	-N					.42				6 5 3 10
RAMY	29	1141	1205	1145	N11	W83	.990	11994	23.3	24	-N	3	C			.23				DE
CAPS	29	1142E	1215D		N12	W80	.981	11994	23.5	33D	-B	3	S		1142	.50				
MCMA	29	1143	1215	1145	N11	W86	.998	11994	22.9	32	-N		C		1145					D
ATHN	29	1144E	1158D	1146	N11	W78	.974	11994	23.6	14D	-B	1			1146	.52	.99			
KHAR	29	1145E	1212		N12	W87	.997	11994	23.0	27D	1N		V							D
ONDR	29	1159E	1224		N08	W90	1.000	11994	22.7	25D	-B		V		1207			2.80		CD
GRP45915	29	1231	1251	1234	N14	E79	.977	12011	4.4	20	--N					.33				5 5 5 5
MCMA	29	1230	1253	1235	N14	E81	.984	12011	4.6	23	-N		C		1235	.21				D
CANR	29	1231	1257	1232	N15	E77	.969	12011	4.3	26	-N	3	V		1233	.40	1.40			
ZURI	29	1232	1250	1234	N15	E78	.973	12011	4.4	18	-N		C		1234	.53				
ATHN	29	1233E	1244	1234	N13	E78	.973	12011	4.4	11D	-B	1			1234	.34	.66			
RAMY	29	1236E	1236D	1236U	N15	E80	.980	12011	4.5		-N	1	C			.15				DE
GRP45916	29	1243	1303	1252	N13	E53	.793	12011	2.5	20	--N					.39				3 3 2 5
MCMA	29	1243	1308	1250	N14	E52	.782	12011	2.4	25	-F		C		1250	.26	.40			D
ONDR	29	1245E	1255		N14	E54	.803	12011	2.6	10D	-N		V		1251			2.30		E
ATHN	29	1253E	1306	1253	N12	E53	.792	12011	2.5	13D	-N	1			1253	.52	.64			
GRP45917	29	1310	1351	1318	N14	E77	.969	12011	4.3	41	--F					.81				4 3 3 6
MCMA	29	1302	1352		N14	E80	.980	12011	4.5	50	-F		C		1320	.62				E
ATHN	29	1312E	1346D	1317	N13	E77	.969	12011	4.3	34D	-F	1			1317	1.02	1.96			
CANR	29	1315	1350	1319	N15	E75	.960	12011	4.2	35	1N	2	V		1318	.80	2.40			
HUAN	29	1328	1335D		N16	E78	.973	12011	4.4	7D	-F	1	P		1333	.21				D
GRP45918	29	1344	1403	1347	N14	E51	.772	12011	2.4	19	-N					.69				7 7 6 8
ONDR	29	1342E	1356D		N14	E53	.793	12011	2.5	14D	1N		V		1347			2.30		
MCMA	29	1344	1406	1346	N14	E51	.772	12011	2.4	22	-B		C		1346	.52	.80			E
CANR	29	1344	1405	1347	N13	E52	.782	12011	2.5	21	-N	2	C		1347	.86	1.37			
ZURI	29	1344	1400	1348	N14	E51	.772	12011	2.4	16	-N		C		1348	.79	1.20			
RAMY	29	1345E	1402	1345U	N16	E48	.740	12011	2.2	17D	-N	1	V			.72				DE
CATA	29	1345E	1400D	1345	N13	E50	.760	12011	2.3	15D	-B		P		1345	.58	.90		(214)	
ATHN	29	1346E	1403D	1348	N13	E53	.793	12011	2.5	17D	-N	1			1348	.66	.84			
GRP45919	29	1403	1411	1404	N19	E54	.806	12011	2.6	8	--N					.34				5 5 5 5
ZURI	29	1402	1408	1404	N20	E54	.807	12011	2.6	6	-N		C		1404	.53	.90			
ATHN	29	1402E	1413	1404	N17	E56	.824	12011	2.8	11D	-N	1			1404	.34	.43			
MCMA	29	1402	1407	1403	N18	E54	.805	12011	2.6	5	-B		C		1403	.21	.38			E
RAMY	29	1404E	1414	1404	N19	E53	.796	12011	2.6	10D	-F	2	V			.31				DE
CANR	29	1404	1413	1406	N20	E55	.817	12011	2.7	9	-N	2	V		1406	.30	.50			
GRP45921	29	1518	1529	1520	N13	E33	.544	12007	1.1	11	--F					.54				4 4 4 7
HUAN	29	1516	1517D		N13	E33	.544	12007	1.1	1D	-F	2	P		1517	.41	.49			E
MCMA	29	1516	1530D	1517	N13	E33	.544	12007	1.1	14D	-F		C		1517	.41	.50			E
RAMY	29	1518E	1533	1520	N14	E32	.532	12007	1.0	15D	-F	3	V			.72				DE
CATA	29	1520	1525	1520	N13	E32	.530	12007	1.0	5	-N		C		1520	.63	.75		(178)	
GRP45923	29	1655	1708	1655	N15	E54	.803	12011	2.8	13	--F					.41				2 2 2 4
HUAN	29	1654	1658	1655	N15	E54	.803	12011	2.8	4	-F	2	C		1655	.21	.34			D
CANR	29	1656	1717		N15	E53	.793	12011	2.7	21	-N	2	V		1658	.60	.88			

SOLAR FLARES
Confirmed
AUGUST 1972

OBSERV-ATORY	OBSERVED UT				LOCATION						DURATION	IMPORTANCE	OBS.		MEASUREMENTS					REMARKS
	DATE 1972 AUG	START	END	MAX. PHASE	APPROX. LAT.	APPROX. MER. DIST.	CENTRAL DISTANCE	MCMATH PLAGE REGION	CMP DAY		MIN.		COND.	TYPE	TIME UT	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH Hg	MAX. INT. %	
GRP45925	29	1735	1748	1738	N19	E52	.786	12011	2.6		13	--N				.56				3 3 3 4
MCMA	29	1734	1742	1738	N18	E52	.785	12011	2.6		8	-N		C	1738	.41	.70			E
RAMY	29	1735E	1739D	1738U	N19	E51	.776	12011	2.6		4D	-N	2	V		.67				DE
CANR	29	1735	1754	1738	N20	E53	.797	12011	2.7		19	-N	2	V	1738	.60	.80			
GRP45926	29	1748	1755	1752	N19	E54	.806	12011	2.8		7	--N				.41				2 2 2 3
MCMA	29	1748	1755	1751	N18	E52	.785	12011	2.6		7	-N		C	1751	.41	.70			E
PALE	29	1752E	1755	17533	N20	E55	.817	12011	2.9		3D	-N	3	V		.41				F
GRP45927	29	1815	1836	1821	S12	E01	.328	12005	29.8		21	--F				.51				2 2 2 3
MCMA	29	1810	1845	1820	S12	E00	.328	12005	29.8		35	-F		C	1820	.52	.50			E
CANR	29	1820	1826	1822	S12	E01	.328	12005	29.8		6	-N	2	V	1822	.50	.50			
928 MCMA	29	1835	1843	1839	N15	E55	.813	12011	2.9		8	--N		C	1839	.26	.40			D 2
929 MCMA	29	2116	2122	2117	N11	E72	.946	12011	4.3		6	--N		C	2117	.21	.60			D 1
GRP45932	30	0500	0516	0503	N16	E54	.804	12011	3.3		16	--F				.97				3 3 3 7
CRON	30	0500E	0508	0501	N17	E56	.824	12011	3.4		8D	-F			0501	.45				
CRON	30	0500E	0508	0501	N17	E56	.824	12011	3.4		8D	-F	3	V	0501	.45				
ATHN	30	0501E	0521	0505	N15	E52	.783	12011	3.1		20D	-F	3	V		.83				DE
ATHN	30	0501E	0521	0505	N15	E52	.783	12011	3.1		20D	-F	1	V		.83				F
ABST	30	0503E	0520D	0503	N15	E54	.803	12011	3.3		17D	1F		P	0503	1.62	2.60		83	E
GRP45934	30	0650	0721	0655	S26	E59	.914	12014	3.7		31	1B				1.91				6 6 5 8
UPIC	30	0648	0726	0659	S26	E60	.920	12014	3.8		36	1N		C						
ATHN	30	0650E	0717	0655	S27	E60	.923	12014	3.8		27D	-B	3	V		.99				F
ABST	30	0650	0708D	0654	S28	E59	.920	12014	3.7		18D	1B		P	0654	2.79			83	F
BUCA	30	0650	0724		S24	E59	.909	12014	3.7		34	1N		C	0657	1.10				
WEND	30	0650	0718		S24	E58	.903	12014	3.6		28	1N		V		4.13				
CRON	30	0650	0720	0653	S25	E59	.912	12014	3.7		30	-B			0653	.55				
CRON	30	0650	0720	0653	S25	E59	.912	12014	3.7		30	-B	3	V	0653	.55				
GRP45937	30	0952	1003	0957	N13	E21	.366	12007	1.8		11	--N				.28				3 3 3 7
HTPR	30	0952	1001	0955	N13	E25	.427	12007	1.3		9	-F		C	0955	.21	.20			D
CAPS	30	0954E	10030		N14	E23	.400	12007	1.1		9D	-B	3	V	0954	.30	.30		(240)	C
ATHN	30	0958E	1004	0959	N13	E16	.289	12007	31.6		6D	-N	3	V		.33				DE
GRP45944	30	1217	1226	1221	N17	E52	.784	12011	3.4		9	--N				.30				4 4 3 7
MCMA	30	1216	1226	1220	N16	E54	.804	12011	3.6		10	-N		C	1220	.26	.40			DH
RAMY	30	1218	1227	1221U	N17	E50	.763	12011	3.3		9	-N	3	V		.31				DE
HUAN	30	1218E	1224		N17	E53	.794	12011	3.5		6D	-N	1	C						D
ATHN	30	1222E	1225	1222	N17	E51	.774	12011	3.3		3D	-N	3		1222	.34	.41			
GRP45945	30	1251	1301	1252	N17	E52	.784	12011	3.4		10	--F				.28				4 4 4 5
ATHN	30	1247E	1249U	1247	N17	E50	.763	12011	3.3		2D	-F	3		1247	.34	.41			
RAMY	30	1248	1303	1250	N17	E50	.763	12011	3.3		15	-F	3	V		.21				DE
MCMA	30	1253	1301	1254	N16	E54	.804	12011	3.6		8	-N		C	1254	.26	.40			D
CANR	30	1255	1300	1255	N17	E53	.794	12011	3.5		5	-N	3	V	1255	.30	.48			
GRP45947	30	1402	1416	1404	N16	E45	.705	12011	3.0		14	--F				.26				2 2 1 5
MCMA	30	1402	1410	1403	N15	E42	.668	12011	2.7		8	-F		C	1403	.26	.30			E
BOUL	30	1402	1421	1404	N17	E48	.741	12011	3.2		19	-F	2	V						
GRP45949	30	1433	1449	1439	N14	E19	.340	12007	1.0		16	--B				.56				4 4 3 5
MCMA	30	1432	1445	1439	N13	E20	.351	12007	1.1		13	-B		C	1439	.41	.40			EV
BOUL	30	1432	1453	1438	N15	E18	.331	12007	1.0		21	-N	2	V						
CANR	30	1432	1453	1438	N13	E20	.351	12007	1.1		21	-B	3	V	1438	.70	.80			
CANR	30	1432	1453		N13	E19	.335	12007	1.0		21	-N	3	V	1434	.40	.50			
CATA	30	1435	1445	1440	N13	E20	.351	12007	1.1		10	-B		C	1440	.58	.82		(219)	
GRP45950	30	1705	1724	1710	N16	E41	.657	12011	2.8		19	--N				.51				5 5 4 5
CANR	30	1701	1721	1708	N15	E40	.642	12011	2.7		20	-N	3	V	1708	.80	.90			
RAMY	30	1706	1724	1710	N17	E39	.633	12011	2.6		18	-B	3	V		.41				DE
MCMA	30	1706	1730	1711	N15	E40	.642	12011	2.7		24	-B		C	1711	.46	.60			E
BOUL	30	1707	1724	1712	N17	E47	.730	12011	3.2		17	-N	3	V						
HUAN	30	1713E	1721		N16	E41	.657	12011	2.8		8D	-N	2	P	1713	.36	.47			
GRP45951	30	1709	1726	1712	N15	E62	.876	12011	4.4		17	--F				.31				3 3 3 4
RAMY	30	1709	1739	1712	N16	E61	.868	12011	4.3		30	-F	3	V		.31				DE
MCMA	30	1709	17210	1711	N14	E62	.876	12011	4.4		12D	-F		C	1711	.26	.50			E
HUAN	30	1713E	1718		N15	E62	.876	12011	4.4		5D	-F	2	P	1713	.36	.71			E

SOLAR FLARES
Confirmed
AUGUST 1972

OBSERVATORY	OBSERVED UT				LOCATION					DURATION	IMPORTANCE		OBS.		MEASUREMENTS					REMARKS
	DATE	START	END	MAX. PHASE	APPROX. LAT.	APPROX. MER. DIST.	CENTRAL DISTANCE	MCMATH PLAGE REGION	CMP DAY	MIN.		COND.	TYPE	TIME UT	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH Hg	MAX. INT. %	
	1972 AUG																			
GRP45952	30	1724	1751	1728	N15	E60	.859	12011	4.2	27	-N				.78				6 5 4 6
RAMY	30	1709	1739	1728	N16	E61	.868	12011	4.3	30	-N	3	V		.62				DE
HUAN	30	1722	1758	1728	N15	E60	.859	12011	4.2	28	-N	1	C	1728	.67	1.23			E
MCMA	30	1722	1908D	1727	N14	E62	.876	12011	4.4	98D	-N		C	1822	1.03	2.00			EHLW
MCMA	30	1722	1908D	1727	N14	E62	.876	12011	4.4	98D	-N		C	1727	.41	.90			EHLW
PALE	30	1726E	1734D	1727U	N15	E58	.842	12011	4.1	8D	-N	2	V		.72				F
BOUL	30	1727	1804	1730	N14	E61	.868	12011	4.3	37	-F	3	V						
PALE	30	1727E	1731D	1727U	N16	E59	.851	12011	4.2	4D	-N	2	C		.81				F
CANR	30	1742	1756		N14	E60	.859	12011	4.2	14	-N	3	V	1747	.60	1.10			
GRP45953	30	1809	1900	1813	N16	E60	.859	12011	4.3	51	--F				.93				2 2 1 4
RAMY	30	1805E	1845	1810U	N16	E60	.859	12011	4.3	40D	-F	3	V		.93				DE
BOUL	30	1813	1915	1816	N16	E60	.859	12011	4.3	62	-F	3	V						
GRP45954	30	1820	1831	1822	N16	E39	.631	12011	2.7	11	--F				.29				2 2 2 3
RAMY	30	1820E	1830	1822U	N17	E39	.633	12011	2.7	10D	-N	3	V		.31				DE
MCMA	30	1820	1831	1822	N15	E39	.629	12011	2.7	11	-F		C	1822	.26	.40			D
GRP45955	30	1859	1909	1904	N13	E19	.335	12007	1.2	10	--F				.34				2 2 2 3
MCMA	30	1859	1910	1903	N13	E17	.304	12007	1.1	11	-N		C	1903	.31	.38			E
RAMY	30	1902E	1908	1904	N12	E20	.347	12007	1.3	6D	-F	3	V		.36				DE
4 STATIONS REPORTING GROUP 45956. 0 STATIONS OBSERVING AND NOT REPORTING.																			
GRP45956	30	1928	1956	1931	N12	E16	.284	12007	1.0	28	-N				.31				3 3 3 3
HUAN	30	1928	1948	1930	N13	E18	.320	12007	1.2	20	-N	2	C	1930	.31	.33			K
MCMA	30	1928	1940	1931	N13	E17	.304	12007	1.1	12	-N		C	1931	.21	.20			E
RAMY	30	1930E	2000	1932	N12	E20	.347	12007	1.3	30D	-F	3	V		.41				DE
MCMA	30	1954	2000	1956	N10	E04	.085	12007	31.1	6	-F		C	1956	.31	.38			E
45956	30	1930	2000	1946	N13	E19	.335	12007	1.2	30	*-F				.83				2 2 1 4
RAMY	30	1938E	2000	1946	N12	E20	.347	12007	1.3	30D	-F	3	V		.83				DE
PALE	30	1949E	1953D		N14	E18	.325	12007	1.2	4D	-F	2	C						F
3 STATIONS REPORTING GROUP 45958. 0 STATIONS OBSERVING AND NOT REPORTING.																			
GRP45958	30	1955	2053	2015	N16	E39	.631	12011	2.8	58	-B				.70				2 2 2 2
RAMY	30	1955	2053	2015	N17	E39	.633	12011	2.8	58	-B	2	V		.57				DE H
MCMA	30	1955	2052	2014	N15	E39	.629	12011	2.8	57	-B		C	2014	.83	1.10			EHK
MCMA	30	1955	2052	2025	N15	E39	.629	12011	2.8	57	-B		C	2014	.83	1.10			V
45958	30	1956	2053	1959	N17	E39	.633	12011	2.8	57	*-N				.34				2 2 2 4
RAMY	30	1955	2053	1959	N17	E39	.633	12011	2.8	58	-N	2	V		.36				DE H
HUAN	30	1956	1956D		N16	E39	.631	12011	2.8		-N	1	P	1956	.31	.40			
45958	30	1955	2053	2045	N15	E40	.642	12011	2.8	58	*-B				1.20				2 2 1 4
MCMA	30	1955	2052	2045	N15	E39	.629	12011	2.8	57	-B		C						
BOUL	30	2034	2054	2045	N15	E40	.642	12011	2.9	20	-B	3	V	2045	1.20	1.50			
GRP45959	30	2143	2152	2149	N14	E17	.310	12007	1.2	9	--N				.23				2 2 2 3
MCMA	30	2143	2152	2148	N13	E16	.289	12007	1.1	9	-N		C	2148	.26	.30			D
PALE	30	2149E	2152	2149U	N14	E18	.325	12007	1.3	3D	-N	2	C		.19				
GRP45961	31	0410	0445	0414	N15	E06	.170	12007	31.6	35	1B				2.45				5 5 5 6
CULG	31	0410	0458	0416	N15	E07	.181	12007	31.7	48	1B		C	0416	2.99	2.90			
ABST	31	0410	0430D	0412	N15	E05	.161	12007	31.5	20D	1N		P	0412	3.16	3.28		74	F
ABST	31	0410	0430D	0416	N12	E06	.133	12007	31.6	20D	1F		P	0416	3.78	3.80		76	F
CRON	31	0410	0434	0412	N17	E07	.207	12007	31.7	24	-N	3	V	0412	1.00				
CRON	31	0410	0434	0412	N17	E07	.207	12007	31.7	24	-N			0412	1.00				
PALE	31	0411	0425D	0415	N16	E07	.194	12007	31.7	14D	-B	2	C		1.44				S F
TACH	31	0411	0444	0413	N14	E06	.157	12007	31.6	33	1B		C	0413	3.65	3.69		152	FY
GRP45967	31	1204	1214	1206	N17	E34	.568	12011	3.1	10	--N				.57				4 4 4 9
MCMA	31	1202	1213D	1203	N16	E34	.565	12011	3.1	11D	-N		C	1203	.52	.70			E
RAMY	31	1205	1213	1207	N16	E35	.579	12011	3.1	8	-F	1	C		.28				DE
CATA	31	1205	1215	1205	N16	E34	.565	12011	3.1	10	-N		C	1205	.87	1.06		(158)	
ARCE	31	1207E	1207D		N18	E34	.571	12011	3.1		-N		P	1207	.59	.70			
GRP45968	31	1256	1323	1300	N16	E35	.579	12011	3.2	27	--N				.66				5 5 5 7
CATA	31	1255	1305D	1255	N15	E34	.562	12011	3.1	10D	-N		P	1255	.69	.85		(199)	
MCMA	31	1256	1325	1300	N16	E34	.565	12011	3.1	29	-N		C	1300	.62	.80			E
ZURI	31	1300E	1322	1300	N16	E37	.605	12011	3.3	22D	-N		P	1300	.61	.80			
ATHN	31	1302E	1312D	1302U	N17	E35	.581	12011	3.2	18D	-N	2	V		.66				DE
RAMY	31	1305E	1322	1305U	N16	E36	.592	12011	3.2	17D	-F	2	C		.74				DE
7 STATIONS REPORTING GROUP 45972. 1 STATIONS OBSERVING AND NOT REPORTING.																			
GRP45972	31	1610	1633	1614	N18	E38	.623	12011	3.5	23	-B				1.18				5 5 4 7
BOUL	31	1609	1630	1614	N19	E37	.613	12011	3.4	21	-N	3	V	1614	.95	1.10			
CANR	31	1610	1630	1615	N17	E38	.621	12011	3.5	20	-N	2	C	1615	1.08	1.70			
ZURI	31	1611	1630	1612	N18	E40	.648	12011	3.7	19	-B		C	1612	1.67	2.10			
UPIC	31	1611	1635D	1614	N18	E38	.623	12011	3.5	24D	1B		C						
MCMA	31	1611	1640	1614	N19	E38	.626	12011	3.5	29	-B		C	1614	1.03	1.40			EH

SOLAR FLARES
Confirmed
AUGUST 1972

OBSERV-ATORY	OBSERVED UT				LOCATION					DURATION	IMPORTANCE	OBS.		MEASUREMENTS					REMARKS
	DATE	START	END	MAX. PHASE	APPROX. LAT.	APPROX. MER. DIST.	CENTRAL DISTANCE	NOAA PLAGE REGION	CMP DAY	MIN.		CONF.	TYPE	TIME UT	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH Hg	MAX. INT. %	
	1972 AUG																		
45972	31	1622	1636	(1625)	N19	E41	.663	12011	3.8	14	°-N				.31				2 2 1 6
HENO	31	1622E	1637D		N18	E44	.697	12011	4.0	15D	-N								
HUAN	31	1624E	1635		N19	E37	.613	12011	3.5	11D	-N	1	F	1625	.31	.39			
973 HUAN	31	1943	2002U		N15	E47	.726	12011	4.3	19D	--F	1	C						3
974 HUAN	31	1952	2001		N18	W04	.208	12007	31.5	9	--F	1	C	1954	.21	.21			D 3
GRP45975	31	2137	2201	2149	N16	E47	.729	12011	4.4	24	-N				.91				2 2 2 2
HCHA	31	2127E	2201D		N15	E47	.728	12011	4.4	34D	-N		F	2151	.83	1.36			E
PALE	31	2146	2151D	2149	N17	E47	.736	12011	4.4	5D	-N	2	C		.99				U F
	31	2201	2215	NO FLARE PATROL															
	31	2216	2234	NO FLARE PATROL															
976 PALE	31	2236	2242	2237	N17	E20	.372	12011	2.4	6	--F	2	V		.21				2
GRP45977	31	2346	0024	2354	S26	E37	.753	12014	3.8	38	1N				1.67				3 3 3 4
CULG	31	2345	0044	2350	S28	E38	.775	12014	3.8	59	1B		C	2350	2.37	3.45			RU
CROM	31	2346	2359D	2359	S25	E36	.738	12014	3.7	13D	-F				.60				
VORO	31	2348	0003	2352	S26	E38	.762	12014	3.8	15	1N		C	2352	2.03	3.02		73	E

"Remarks":

A = Eruptive prominence, base at >90°.
B = Probably the end of a more important flare.
C = Invisible 10 minutes before.
D = Brilliant point.
E = Two or more brilliant points.
F = Several eruptive centers.
G = No spots visible in the neighborhood.
H = Flare with high velocity dark surge.
I = Very extensive active region.
J = Plage with flare shows marked intensity variations.
K = Several intensity maxima.
L = Filaments show effects of sudden activation.
M = White-light flare.
N = Continuous spectrum shows effects of polarization.
O = Observations have been made in the calcium II lines H or K.
P = Flare shows helium D_3 in emission.
Q = Flare shows the Balmer continuum in emission.
R = Marked asymmetry in Hα line.
S = Brightening follows disappearance of filament (same position).
T = Region active all day.
U = Close and somewhat parallel bright filaments (‖ or Y shape).
V = Occurrence of an explosive phase.
W = Great increase in area after time of maximum intensity.
X = Unusually wide Hα emission.
Y = Onset of a system of loop-type prominences.
Z = Major sunspot umbra covered by flare.

Note:
A line of explanation has been added before each flare event having more than one maxima. The total number of stations reporting some part of the event is given. The number of stations observing at the time of the principal maximum but not reporting the event is given in the second statement. Care should be exercised in utilizing the numbers in the remarks column. The first number is the number of stations reporting the individual maximum, and not the total number of stations reporting some part of the flare event. The last number is the number of stations reporting at the time of the individual maximum and not necessarily the total number of stations observing during the flare event. GRP numbers may appear several times in order to indicate secondary maxima. An asterisk beside an importance indicates a secondary maximum. The word "GRP" has also been omitted to aid in pointing to this condition.
When it is impossible to determine the time of Maximum Phase from the individual reports the time of Area Measurements is used. This time appears in parentheses. For Flares reported by only one station the last 3 digits of the group number appear to the left of the station code.

In the importance column "--" signifies the subflare has been confirmed by the NOAA grouping program but is not included in the I.A.U. Quarterly Bulletin on Solar Activity. These subflares are also not included in the Flare Index below.

DAILY FLARE INDICES

Date	Flare Index	HR OBS	Date	Flare Index	HR OBS	Date	Flare Index	HR OBS
720801	79.79	22.3	720811	41.76	24.0	720822	90.93	24.0
720802	628.19	22.5	720812	6.74	24.0	720823	74.37	23.3
720803	23.68	23.5	720813	0.61	24.0	720824	253.38	23.3
720804	1275.77	23.8	720815	7.34	24.0	720825	70.66	24.0
720805	0.00	23.5	720816	30.36	23.8	720826	7.75	23.4
720806	11.88	23.7	720817	3.98	23.4	720827	20.89	23.3
720807	1813.81	23.6	720818	10.06	24.0	720828	63.41	23.7
720808	2.76	23.2	720819	44.92	24.0	720829	19.30	24.0
720809	4.36	23.3	720820	26.50	22.9	720830	25.56	24.0
720810	31.07	23.3	720821	9.34	24.0	720831	58.12	23.5

When no Flare Index is given, it is 0 for that day.

SOLAR FLARES
Unconfirmed

AUGUST 1972

OBSERVATORY	OBSERVED UT				LOCATION					DURATION	IMPORTANCE	OBS.		MEASUREMENTS					REMARKS
	1972 AUG	START	END	MAX. PHASE	APPROX. LAT.	APPROX. MER. DIST.	CENTRAL DISTANCE	McMATH PLAGE REGION	CMP DAY	MIN.		COND.	TYPE	TIME UT	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH Hα	MAX. INT. %	
464 CRON	01	0428	0448	0433	N11	E49	.751	11976	4.9	20	-N	3	V		.55				5
466 ATHN	01	0505	0518	0506	N08	W80	.983	11972	26.2	13	-F	2	V		.33				DE 5
472 ARCE	01	1253E	1329		N16	E45	.710	11976	4.9	36D	-N		C	1300	.53	.70			11
GRP45473	01	1537	1555	1542	N14	E44	.695	11976	5.0	18	-F								2 2 0 7
HUAN	01	1532	1555		N14	E44	.695	11976	4.9	23	-F	1	C						T
BOUL	01	1541	1555	1542	N13	E43	.682	11976	4.9	14	-F	3	V						
GRP45475	01	1658	1750	1707	N13	E42	.669	11976	4.9	52	-N				.90				2 2 1 5
CANR	01	1658	1750	1707	N12	E41	.655	11976	4.8	52	-N	2	V		.90	1.10			
RAMY	01	1659E	1720D		N14	E43	.683	11976	4.9	21D	-N	3	V						DE
483 ATHN	02	0714E	0731	0715	N10	W90	1.000	11972	26.6	17D	-F	3	V						DE 4
484 ATHN	02	0805E	0816	0807	S11	W43	.719	11970	30.1	11D	-N	3	V		.50				DE 5
485 CAPS	02	0807E	0829D		S11	E38	.661	11977	5.2	22D	-N	3	V	0808	.50	.60		(182)	5
486 ARCE	02	0907E	0907D		N14	E32	.538	11976	4.8		-N		P	0907	.83	1.00			8
488 UPIC	02	1556	1622	1609U	S04	E30	.523	11977	4.9	26	-N		C						4
490 CANR	02	1802	1806		S20	W21	.546	11974	1.2	4	-N	2	V	1802	.20	.20			3
497 ARCE	03	0908E	0935D		N17	E19	.369	11976	4.8	27D	-F		C	0916	.56	.60			10
498 BUCA	03	1105	1130		N11	E19	.333	11976	4.9	25	-F		P	1115	.72	.80			9
499 ARCE	03	1220E	1232D		N14	E14	.275	11976	4.6	12D	-F		C	1220	.17	.20			8
500 HUAN	03	1245	1259	1248	N08	W87	.998	11968	28.0	14	-N	2	C	1248	.21				D 7
501 ARCE	03	1317	1347		N10	E18	.314	11976	4.9	30	-F		C	1337	.30	.30			8
507 HITK	04	0140E	0151		N10	E10	.185	11976	4.8	11D	-F		C	0140	.52	.50			D 4
510 ARCE	04	0943	1000D	0952	S03	W12	.258	11979	3.5	17D	-N		C	0952	.23	.23			H 11
GRP45511	04	1200	1322	1206	N14	W01	.141	11976	4.4	82	-N				2.22				2 2 2 11
ARCE	04	1200E	1322		N14	W07	.183	11976	4.0	82D	-N		C	1215	1.08	1.10			H
ZURI	04	1202E	1212D	1206	N14	E09	.163	11976	4.9	10D	1N		P	1206	3.36	3.40			
514 ATHN	04	1605E	1618	1608	N10	E01	.072	11976	4.7	13D	-N	1		1608	.34	.33			8
518 TEHR	05	0234	0244	0238	N14	E19	.347	11976	6.5	10	-F	3	V		.19				DE 4
519 HITK	05	0442	0451	0443	S07	W90	1.000	11970	29.4	9	1F		C	0443	.52				D 6
520 HITK	05	0523	0531	0524	N15	W10	.230	11976	4.5	8	-F		C	0524	.62	.60			D 8
GRP45521	05	0654	0703	0657	N14	W04	.154	11976	5.0	9	-N				.91				2 2 2 8
MONT	05	0652E	0701	0659	N14	W04	.154	11976	5.0	9D	-N		C	0659	1.13				
CATA	05	0655	0705	0655	N13	W04	.139	11976	5.0	10	-N		C	0655	.69	.70		(168)	
523 MONT	05	0714	0720	0718	S18	W63	.918	11974	31.6	6	-F		C	0718	.52				8
525 MONT	05	0815	0817	0816	S14	W83	.996	11970	30.1	2	-F		C	0816	.10				8
527 MONT	05	0851	0905	0854	S18	W64	.924	11974	31.6	14	-N		C	0854	1.13				9
528 ARCE	05	0855E	0911D		S04	W25	.453	11979	3.5	16D	-F		C	0900	.69	.80			11
GRP45523	05	0909	0950	(0917)	N12	W08	.172	11976	4.8	41	-F				.22				2 2 2 10
HTPR	05	0900	0915	0904	N16	W13	.278	11976	4.4	15	-F		C	0904	.41	.40			
ARCE	05	0907E	0950D		N10	W06	.124	11976	4.9	43D	-F		C	0916	.23	.23			
HTPR	05	0910	0934D		N10	W08	.154	11976	4.8	24D	-F		C	0918	.21	.20			
531 HTPR	05	1025	1112	1040	S17	W67	.940	11970	31.4	47	-F		C	1040	.72				9
GRP45532	05	1039	1102	1041	S14	W64	.918	11974	31.6	23	-F				.20				2 2 2 9
ATHN	05	1037E	1059	1037U	S14	W65	.924	11974	31.6	22D	-F	3	V		.17				DE
CATA	05	1040	1105	1045	S13	W63	.909	11974	31.7	25	-N		C	1045	.23	.55		(182)	
533 ATHN	05	1050E	1054	1051	N14	W05	.162	11976	5.1	4D	-F	3	V		.33				DE 10
535 RAMY	05	1153E	1215		S12	W80	.989	11970	30.5	22D	-F	3	V						DE 8

SOLAR FLARES
Unconfirmed

AUGUST 1972

OBSERV-ATORY	OBSERVED UT				LOCATION					DURATION	IMPORTANCE	OBS.		MEASUREMENTS					REMARKS
	1972 AUG	START	END	MAX. PHASE	APPROX. LAT.	APPROX. MER. DIST.	CENTRAL DISTANCE	MCMATH PLAGE REGION	CMP DAY	MIN.		COND.	TYPE	TIME UT	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH HG	MAX. INT. %	
536 CATA	05	1245	1310	1245	N17	W08	.233	11976	4.9	25	-N		C	1245	.58	.60		(186)	7
537 BOUL	05	1351	1400	1355	S13	W84	.997	11970	30.3	9	-F	2	V	1355	.30	.90			8
GRP4553a	05	1426	1434	1428	N16	W14	.292	11976	4.6	8	-F				.53				2 2 2 7
BOUL	05	1426	1432	1429	N16	W13	.278	11976	4.6	6	-F	2	V	1429	.60	1.00			
RAMY	05	1426	1435	1427	N15	W14	.282	11976	4.6	9	-F	3	C		.46				DE
539 ATHN	05	1555E	1604	1557	S10	W88	1.000	11970	30.1	90	-N	2	V						DE 6
GRP45540	05	1651	1700	1655	N12	W10	.200	11976	5.0	9	-F				.20				2 2 2 6
HTPR	05	1651	1700	1655	N10	W10	.185	11976	5.0	9	-F		C	1655	.10	.10			
CANR	05	1651	1659		N14	W10	.219	11976	5.0	8	-N	2	V		.30	.30			
541 PALE	05	1727	1738	1731	N16	W17	.332	11976	4.5	11	-N	2	C		.36				F 5
542 PALE	05	1811	1832	1814U	S17	W68	.946	11974	31.7	21	-N	2	C		.55				F 5
544 RAMY	05	2114E	2125		S12	W86	.999	11970	30.4	11D	-N	3	V						DE 3
548 ATHN	06	0446	0458	0449	N11	W17	.301	11976	4.9	12	-N	2	C		.50				DE 5
549 HTPR	06	0520	0540	0522	S08	W31	.559	11979	3.9	20	-F		C	0522	.21	.20			D 6
551 KODA	06	0648	0700	0651	S19	W69	.953	11974	1.1	12	1N		V	0648	2.41	2.30	1.44		D 9
GRP45552	06	0725	0730	0726	N14	W20	.362	11976	4.8	5	-F				.20				2 2 2 9
TEHR	06	0724	0729	0726	N14	W18	.332	11976	5.0	5	-F	3	V		.69				DE
HTPR	06	0725	0731	0726	N13	W21	.372	11976	4.7	6	-F		C	0726	.31	.38			D
556 HTPR	06	0955	1030	1007	S17	W80	.991	11970	31.4	35	-N		C	1007	.62				8
557 CANR	06	1015	1110	1025	S17	W77	.983	11974	31.7	55	-N	2	V		.60	2.00			8
558 HTPR	06	1132	1135	1133	N18	W21	.402	11976	4.9	3	-F		C	1133	.31	.30			7
560 HTPR	06	1235	1247	1242	S17	W83	.996	11970	31.3	12	-F		C	1242	.21				8
561 HTPR	06	1252	1320	1305	S08	W37	.636	11979	3.8	28	-F		C	1305	.10	.10			9
GRP45562	06	1428	1437	(1434)	N12	W21	.367	11976	5.0	9	-F				.34				2 2 2 8
HTPR	06	1428	1435D		N12	W20	.352	11976	5.1	7D	-F		C	1432	.31	.30			
HUAN	06	1435E	1437D		N11	W22	.379	11976	5.0	2D	-N	1	P	1435	.36	.39			
568 PALE	06	2234	2248	2237	N11	W27	.456	11976	4.9	14	-N	3	V		.52				4
571 MONT	07	0737	0744	0739	S17	W90	1.000	11974	31.6	7	-F		C	0739	.10				9
572 ARCE	07	0759E	0818D		S18	W90	1.001	11974	31.6	19D	-N		C	0811	.20				14
GRP45573	07	0845	0905	0851	N10	W32	.528	11976	5.0	20	-F				.26				2 2 2 11
MONT	07	0844	0859	0846	N10	W34	.557	11976	4.8	15	-N		C	0846	.41				
HTPR	07	0845	0910	0855	N10	W30	.499	11976	5.1	25	-F		C	0855	.10	.10			
574 MONT	07	1019	1023	1021	N18	W37	.615	11976	4.7	4	-F		C	1021	.21				9
GRP45576	07	1032	1103	1036	N13	W35	.576	11976	4.8	31	1F				4.06				2 2 1 9
ONDR	07	1030E	1103D		N13	W36	.589	11976	4.7	33D	1N		V	1030			2.50		CEFIJ
ABST	07	1033	1038D	1036	N17	W35	.586	11976	4.8	5D	1F		P	1036	2.17	2.60		69	EJ
ABST	07	1033	1038D	1036	N10	W34	.557	11976	4.9	5D	1F		P	1036	1.89	2.30		76	EJ
581 PALE	07	1724	1738	1725	S04	W57	.846	11979	3.5	6	-N	3	C		.24				6
583 MITK	07	2323E	2329D		N12	W44	.692	11976	4.7	6D	-N		C	2323	1.13	1.60			E 6
587 ABST	08	0502	0518	0506	S05	W87	.999	11975	1.7	16	-F		C	0506	.54			54	ADJ 9
588 HTPR	08	0534	0542	0537	S10	W59	.874	11979	3.8	8	-F		C	0537	.21	.40			9
GRP45590	08	0625	0636	0627	S02	W65	.909	11979	3.4	11	-N				.57				2 2 2 9
CATA	08	0625	0635	0625	S02	W64	.902	11979	3.5	10	-B		C	0625	.23	.53		(209)	
ABST	08	0625	0636	0628	S02	W65	.909	11979	3.4	11	-F		C	0628	.90			87	D
591 MONT	08	0720	0724	0722	S09	W58	.864	11979	4.0	4	-F		C	0722	.10				10
GRP45593	08	0820	0840	(0820)	N13	W50	.762	11976	4.6	20	-F				.17				2 2 1 12
ARCE	08	0820E	0840D		N10	W52	.783	11976	4.4	20D	-N		C	0820	.17	.38			
ISTA	08	0820	0840		N16	W47	.732	11976	4.6	20	-F								E

SOLAR FLARES
Unconfirmed

AUGUST 1972

OBSERVATORY	OBSERVED UT				LOCATION					DURATION	IMPORTANCE	OBS.		MEASUREMENTS					REMARKS
	1972 AUG	START	END	MAX. PHASE	APPROX. LAT.	APPROX. MER. DIST.	CENTRAL DISTANCE	MCMATH PLAGE REGION	CMP DAY	MIN.		CONF.	TYPE	TIME UT	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH Hα	MAX. INT. %	
594 ARCE	08	0838	0918D	0845	S08	W60	.879	11979	3.9	32D	-F		C	0845	.32	.70			12
595 ARCE	08	0920E	0935D		N11	W51	.773	11976	4.6	15D	-N		C	0935	.23	.40			12
596 ABST	08	1140E	1156D	1143	S10	W65	.919	11979	3.6	16D	-F		P	1143	.90			76	DZ 10
597 ARCE	08	1316E	1345D		N12	W53	.794	11976	4.6	29D	-N		C	1316	.26	.40			10
598 HTPR	08	1435	1448	1435	N11	W53	.794	11976	4.6	5	-F		C	1435	.21	.30			11
603 MONT	09	0749	0752	0751	N16	W31	.528	11987	7.0	3	-F		C	0751	.10				12
605 ARCE	09	0820E	0842D		N15	W32	.539	11987	6.9	22D	-F		C	0831	.23	.30			H 12
GRP45606	09	0902	0916	0908	S10	W78	.983	11979	3.5	14	-F				.42				2 2 2 12
MONT	09	0902	0915	0908	S10	W80	.989	11979	3.4	13	-N		C	0908	.52				H
HTPR	09	0902	0917	0907	S10	W75	.972	11979	3.8	15	-F		C	0907	.31				
609 ABST	09	1112E	1123	1113	S11	W81	.991	11979	3.4	11D	1F		P	1113	1.18			65	E 9
GRP45610	09	1515	1523	(1517)	N14	W54	.893	11976	4.8	8	-F				.52				2 2 1 10
MCMA	09	1515E	1522D		N13	W65	.901	11976	4.8	7D	-N		P	1517	.52	1.20			E
HUAN	09	1515	1523		N14	W63	.886	11976	4.9	8	-F	1	C						
613 PALE	09	1650	1708	1653	N12	W62	.878	11976	5.1	18	-F	2	C		.63				F 7
614 HTPR	09	1713	1716	1714	S10	W84	.997	11979	3.4	3	-N		C	1714	.41				5
615 HTPR	09	1750	1752	1751	S10	W85	.998	11979	3.4	2	-F		C	1751	.21				6
616 MCMA	09	1835E	2030D		S10	W88	1.000	11979	3.2	115D	-N		P	1835					4
617 PALE	09	2219	2224	2219	N13	W66	.908	11976	5.0	5	-N	3	C		.63				F 3
GRP45620	10	0327	0330		N18	W72	.945	11976	4.7	3	-F				.25				1 1 1 5
CRON	10	0327E	0330		N18	W72	.945	11976	4.7	3D	-F	3	V		.25				
CRON	10	0327E	0330		N18	W72	.945	11976	4.7	3D	-F	3	V		.25				
GRP45622	10	0801	0954	0806	S09	W90	1.000	11979	3.6	113	-B				.89				2 2 2 17
ARCE	10	0800E	0954D		S10	W90	1.000	11979	3.6	114D	-B		C	0805	1.05				K
ARCE	10	0800E	0825D		S06	W90	1.000	11979	3.6	25D	-N		C	0800	.33				
MONT	10	0801	0842	0806	S10	W90	1.000	11979	3.6	41	-N		C	0806	.72				
MONT	10	0909	0953	0912	S10	W90	1.000	11979	3.6	44	-N		C	0912	.21				
623 MONT	10	0911	0926	0913	S05	W01	.198	11981	10.3	15	-F		C	0913	.10				15
GRP45624	10	1125	1200	1138	N15	W50	.764	11987	6.7	35	-F				.52				2 2 1 12
HTPR	10	1125	1200	1138	N16	W50	.765	11987	6.7	35	-F		C	1138	.52	.70			
ONDR	10	1128E	1142D		N14	W50	.763	11987	6.7	14D	1N		V	1129			2.90		CDH
626 ARCE	10	1345E	1400D		S09	W90	1.000	11979	3.8	15D	-B		C	1355	.26				11
627 HUAN	10	1403	1411	1406	S08	W90	1.000	11979	3.8	8	-F	1	C	1406	.26				D 10
GRP45628	10	1540	1552	1542	S08	W90	1.000	11979	3.9	12	-N				.31				2 2 1 10
ATHN	10	1540E	1550	1540U	S08	W90	1.000	11979	3.9	10D	-N	3	V						DE
HUAN	10	1540	1553	1543	S08	W90	1.000	11979	3.9	13	-N	1	C	1543	.31				
629 HUAN	10	1717	1723		S08	W90	1.000	11979	4.0	6	-F	1	C	1721	.31				6
630 HUAN	10	1810E	1815D		S08	W90	1.000	11979	4.0	5D	-F	1	C	1814	.31				6
631 HUAN	10	1940	1943	1941	S08	W90	1.000	11979	4.1	3	-F	1	C	1941	.21				D 4
636 TACH	11	0350	0402	0353	N10	W85	.995	11976	4.8	12	-B		C	0353	.52			84	ETY 7
638 MONT	11	0703	0714	0706	N11	W90	1.000	11976	4.5	11	-N		C	0706	.21				12
640 MONT	11	0955	1006	0957	N18	W86	.995	11976	5.0	11	-F		C	0957	.21				14
641 MONT	11	1034	1037	1035	S03	W73	.959	11977	6.0	3	-F		C	1035	.21				13
644 HUAN	11	1600	1610	1603	S11	E44	.733	11986	15.0	10	-F	2	C	1603	.26	.37			D 6
646 ATHN	12	0619	0631	0622	S11	E36	.641	11986	15.0	12	-F	2	C		.33				DE 10
GRP45647	12	0710	0744	0715	N15	W76	.965	11987	6.6	34	-N				.22				2 2 2 11
MONT	12	0709E	0742	0715	N15	W78	.973	11987	6.4	33D	-N		C	0715	.21				
CATA	12	0710	0745	0715	N15	W74	.956	11987	6.7	35	-N		C	0715	.23			(204)	

SOLAR FLARES
Unconfirmed

AUGUST 1972

OBSERV-ATORY	OBSERVED UT				LOCATION					DURATION	IMPORTANCE	OBS.		MEASUREMENTS					REMARKS
	1972 AUG	START	END	MAX. PHASE	APPROX. LAT.	APPROX. MER. DIST.	CENTRAL DISTANCE	McMATH PLAGE REGION	CMP DAY	MIN.		COND.	TYPE	TIME UT	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH Hα	MAX. INT. %	
649 CAPS	12	0903E	0920D		N12	W90	1.000	11976	5.6	17D	-F	2	S						14
GRP45651	12	1042	1053	1045	N16	W78	.973	11987	6.6	11	-N				1.86				2 1 1 10
ATHN	12	1042	1053	1045	N16	W78	.973	11987	6.6	11	-N	3	C						DE
MONT	12	1044	1103	1102	N14	W79	.977	11987	6.5	19	-N		C	1102	1.86				
652 MONT	12	1137	1145D	1145	N14	W79	.977	11987	6.6	8D	-N		C	1145	1.86				9
654 PALE	12	1834	1845	1836U	S16	W40	.714	11981	9.8	11	-F	2	C		.36				F 4
655 MITK	13	0353	0435	0405	N13	W90	1.000	11987	6.4	42	1N		C	0405	1.34				5
656 HTPR	13	0535E	0539D		N13	W90	1.000	11987	6.5	4D	-F		C	0535	.21				7
657 HTPR	13	0542E	0546D		N13	W90	1.000	11987	6.5	4D	-F		C	0542	.31				7
658 HTPR	13	0550E	0552D		N13	W90	1.000	11987	6.5	2D	-F		C	0550	.31				8
659 HTPR	13	0600E	0604D		N13	W90	1.000	11987	6.5	4D	-F		C	0604	.31				11
660 HTPR	13	0948	0959D		N13	W90	1.000	11987	6.7	11D	-F		C	0959	.21				10
663 ARCE	14	0925E	0950D		N06	E90	1.000	11994	21.1	25D	-N		C	0930	.33				8
664 RAMY	14	1531	1537	1532	S11	E03	.306	11986	14.9	6	-F	3	C		.83				DE 8
665 HUAN	14	1730	1734	1730	S26	E80	.994	11993	20.7	4	-F	1	C	1730	.26				5
668 HTPR	15	0659	0704	0701	S27	E68	.960	11993	20.4	5	-F		C	0701	.31				9
673 MONT	16	0803	0805	0804	N18	W25	.452	11985	14.5	2	-N		C	0804	.21				8
GRP45675	16	1433	1446	1435	S26	E50	.852	11993	20.4	13	-F				.27				2 2 2 8
HTPR	16	1432	1447	1434	S26	E50	.852	11993	20.4	15	-F		C	1434	.21	.30			E
ATHN	16	1433	1445	1436	S25	E50	.848	11993	20.4	12	-N	3	C		.33				DE
677 HUAN	16	1609	1616	1612	N06	E85	.995	11994	23.0	7	-F	2	C	1612	.26				D 4
678 HUAN	16	1656	1705	1659U	N08	E85	.995	11994	23.1	9	-F	1	C	1659	.26				D 6
680 SIBE	17	0054	0110		S06	W90	1.000	11981	10.3	16	-F		V						3
682 TEHR	17	0440E	0448	0444U	S09	E26	.505	11992	19.1	8D	-F	3	V		.19				DE 4
683 MONT	17	0639E	0722D	0714	S10	E28	.538	11992	19.4	43D	-N		C	0714	1.13				7
684 ABST	17	0742	0754	0744	S11	E25	.508	11992	19.2	12	-F		C	0744	.81	1.00			D 6
685 ARCE	17	0805E	0820D		S11	E23	.484	11992	19.1	15D	-N		C	0810	.23	.30			H 6
686 ARCE	17	0815E	0856D		S10	E25	.500	11992	19.2	41D	-F		C	0828	.30	.30			5
687 CAPS	17	0857E	0912D		N15	W38	.618	11985	14.5	15D	-B	1	V	0856	.05	.07		(201)	6
693 MITK	18	0311	0338	0313	N07	E44	.690	11994	21.4	27	-F		C	0313	.83	1.20			E 9
694 MITK	18	0341	0353	0346	N14	W47	.728	11985	14.6	12	-N		C	0346	.83	1.20			D 9
695 TEHR	18	0616	0639	0627U	N15	W48	.740	11985	14.7	23	-N	3	V		.74				F 8
696 HTPR	18	0647E	0717		N15	W52	.784	11985	14.4	30D	-F		C	0700	.62	.90			10
698 MONT	18	1009	1024	1012	N04	E44	.693	11994	21.7	15	-N		C	1012	.52				8
699 HTPR	18	1025	1030	1025	N16	W57	.834	11985	14.2	5	-F		C	1025	.62	1.00			E 7
GRP45701	18	1158	1205	1201	N17	W54	.805	11985	14.4	7	-F				.19				2 2 2 8
HTPR	18	1156	1205	1201	N16	W58	.843	11985	14.1	9	-F		C	1201	.21	.30			E
CATA	18	1200	1205D	1200	N18	W50	.765	11985	14.8	5D	-N		P	1200	.17	.27		(168)	
GRP45702	18	1244	1253	1245	N16	W52	.784	11985	14.6	9	-F				.35				2 2 2 8
ATHN	18	1244E	1254	1245	N16	W52	.784	11985	14.6	10D	-F	3	V		.33				DE
RAMY	18	1245E	1252	1245U	N15	W51	.773	11985	14.7	7D	-F	3	V		.36				DE
704 HUAN	18	1525	1530	1526	N17	W53	.795	11985	14.7	5	-F	1	C	1526	.26	.42			D 8
705 HTPR	18	1655	1708	1703	N16	W55	.815	11985	14.6	13	-F		C	1703	.21	.30			E 6
708 HUAN	18	1835	1853	1838	N17	W60	.861	11985	14.3	18	-N	1	C	1838	.26	.52			D 5

SOLAR FLARES
Unconfirmed

AUGUST 1972

OBSERVATORY	OBSERVED UT				LOCATION					DURATION	IMPORTANCE	OBS.		MEASUREMENTS					REMARKS
	1972 AUG	START	END	MAX. PHASE	APPROX. LAT.	APPROX. MER. DIST.	CENTRAL DISTANCE	MCMATH PLAGE REGION	CMP DAY	MIN.		CONF.	TYPE	TIME UT	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH Ho.	MAX. INT. %	
709 RAMY	18	2128E	2136D	2129U	N05	E31	.513	11994	21.2	8D	-F	2	V		.46				DE 5
711 MANI	18	2302E	2307	2302	N16	W56	.824	11985	14.8	5D	-N	1		2302	.41	.69			3
714 MITK	19	0342	0354	0345	S14	E02	.357	11992	19.3	12	-F		C	0345	.52	.60			D 7
715 ATHN	19	0543E	0556	0545	S04	E73	.960	12001	24.7	13D	-N	3	V		.33				DE H 9
GRP45717	19	0600	0653	0633	S05	E69	.939	12001	24.4	53	-F				.31				2 2 1 8
HTPR	19	0600	0645	0633	S05	E70	.945	12001	24.5	45	-F		C	0633	.31				
CAPS	19	0603E	0700D		S04	E67	.925	12001	24.3	57D	-N	1	S						
718 HTPR	19	0645	0655	0648	N16	W61	.869	11985	14.7	10	-F		C	0648	.10	.20			8
GRP45720	19	0707	0732	0712	S06	E72	.956	12001	24.7	25	-F				.62				2 2 2 7
HTPR	19	0707	0735	0712	S05	E70	.945	12001	24.5	28	-F		C	0712	.72				
ATHN	19	0710E	0729	0711	S07	E73	.962	12001	24.8	19D	-N	1		0711	.52	.66			
722 ONDR	19	0831E	0845D		S12	W03	.326	11992	19.1	14D	1N		V	0832			3.40		C 7
723 CAPS	19	1052E	1052D		S05	E65	.913	12001	24.3		-B	1	S						6
726 CAPS	19	1131E	1134D		S05	E65	.913	12001	24.4	3D	-N	1	S	1131	.50			(166)	7
730 HTPR	19	1350	1400	1354	N16	W64	.892	11985	14.8	10	-F		C	1354	.10	.20			9
3 STATIONS REPORTING GROUP 45732. 4 STATIONS OBSERVING AND NOT REPORTING.																			
GRP45732	19	1602	1625	1608	S12	W09	.356	11992	19.0	23	-F				.41				2 2 1 8
MCMA	19	1601	1625	1606	S12	W08	.349	11992	19.1	24	-N		C	1606	.41	.50			E
HUAN	19	1602	1625	1610U	S11	W09	.341	11992	19.0	23	-F	1	C						
732 RAMY	19	1603	1610D	1605	S11	E08	.334	11992	20.3	7D	+-F	2	C		.67				DE 7
733 HTPR	19	1700	1707	1703	N16	W65	.900	11985	14.8	7	-F		C	1703	.21	.40			4
734 HUAN	19	1741	1753U	1743U	S04	E67	.925	12001	24.8	12D	-F	1	C	1743	.21				D 4
GRP45742	20	0539	0547	0540	S08	E58	.863	12001	24.6	8	-F				.48				2 2 2 6
ATHN	20	0539E	0547	0540	S08	E58	.863	12001	24.6	8D	-N	2	V		.50				DE
CRON	20	0539E	0546		S07	E58	.862	12001	24.6	7D	-F	3	V		.45				
CRON	20	0539E	0546		S07	E58	.862	12001	24.6	7D	-F	3	V		.45				
743 ABST	20	0649	0656	0650	S04	E60	.873	12001	24.8	7	1F		C	0650	1.26	2.60		71	EV 8
GRP45744	20	0658	0706	0659	N10	E51	.772	11999	24.1	8	-F				.57				2 2 2 7
ABST	20	0657	0707	0658	N11	E55	.813	11999	24.4	10	-F		C	0658	.81	1.40		52	DGV
ATHN	20	0658	0705	0700	N08	E46	.715	11999	23.7	7	-F	3	V		.33				DE
GRP45746	20	1047	1053	1050	N13	W78	.974	11985	14.6	6	-F				.15				2 2 2 8
HTPR	20	1047	1052	1049	N13	W80	.981	11985	14.4	5	-N		C	1049	.21				
TEHR	20	1050E	1053	1051U	N12	W75	.961	11985	14.8	3D	-F	3	V		.09				DE
749 HUAN	20	1707	1713		S04	E53	.809	12001	24.7	6	-F	1	C	1708	.31	.52			E 5
753 ARCE	21	0840E	0900D		S07	E68	.935	12015	26.5	20D	-F		C	0845	.20	.50			7
755 CAPS	21	1326E	1422D		S16	E90	1.001	12002	28.3	56D	1N	2	S						8
756 HTPR	21	1445	1505	1453	S13	E59	.882	12002	26.0	20	-F		C	1453	.62	1.20			9
GRP45757	21	1637	1657	1641	S14	E72	.963	12002	27.1	20	-F				.21				2 2 2 8
HTPR	21	1635	1702	1641	S14	E73	.968	12002	27.2	27	-F		C	1641	.21				
HUAN	21	1639	1651	1641	S14	E71	.959	12002	27.0	12	-F	2	C	1641	.21				D
761 PALE	21	2106E	2112	2106U	S10	W40	.685	11992	18.9	6D	-F	4	V		.83				F 3
763 PALE	21	2241	2244	2241	S02	E34	.575	12001	24.5	3	-N	3	V		.41				4
765 CULG	21	2313	0243		N14	W35	.575	11995	19.3	21B	1F		P	0015	2.48	2.90			S 4
768 PALE	22	0029E	0033	0030	S10	E57	.859	12015	26.3	4D	-F	3	V		.62				4
769 PALE	22	0053E	0100	0054	S24	W22	.611	11993	20.4	7D	-F	3	C		.27				4
770 PALE	22	0150E	0208	0155	S11	W42	.713	11992	18.9	18D	-F	3	V		.62				F 4
773 ABST	22	0520	0529	0522	N09	E28	.466	11999	24.3	9	-F		C	0522	1.08	1.20		63	E 8
774 MONT	22	0658	0707	0700	N09	E29	.482	11999	24.5	9	-F		C	0700	.21				11

SOLAR FLARES
Unconfirmed

AUGUST 1972

OBSERV-ATORY	OBSERVED UT				LOCATION					DURATION	IMPORTANCE	OBS.		MEASUREMENTS					REMARKS
	1972 AUG	START	END	MAX. PHASE	APPROX. LAT.	APPROX. MER. DIST.	CENTRAL DISTANCE	MCMATH PLAGE REGION	CMP DAY	MIN.		COND.	TYPE	TIME UT	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH MG	MAX. INT. %	
775 HTPR	22	0810	0823	0817	N08	E27	.451	11999	24.4	13	-F		C	0817	.21	.20			11
776 HTPR	22	0905	0933	0917	N08	E26	.435	11999	24.3	28	-F		C	0917	.21	.20			12
777 ABST	22	0940	0944	0941	S25	W29	.677	11993	20.2	4	-F		C	0941	.81	1.10		72	DV 12
GRP45778	22	1123	1137	1127	S13	E59	.882	12002	26.9	14	-N				.41				2 2 2 6
HTPR	22	1123	1132	1127	S13	E58	.874	12002	26.8	9	-N		C	1127	.52				
CAPS	22	1127E	1142D		S13	E60	.890	12002	27.0	15D	-N	1	V	1128	.30			(166)	
780 ATHN	22	1223	1249	1226	S03	E27	.481	12001	24.5	26	-F	3	C		1.01				DE 7
782 CAPS	22	1334E	1352D		N10	E25	.421	11999	24.4	18D	-F	1	S	1335	.04	.06		(157)	9
783 HTPR	22	1545	1613	1553	S16	E58	.881	12002	27.0	28	-F		C	1553	.10	.20			7
785 HUAN	22	1650	1701	1657U	S16	E58	.881	12002	27.1	11	-F	1	C	1657	.36	.73			E 6
788 HUAN	22	1832	1840	1835	S16	E57	.874	12002	27.0	8	-N	1	C	1835	.31	.63			4
789 RAMY	22	1904E	1924	1905	S12	W54	.838	11992	18.7	20D	-F	2	V		.52				DE 5
792 ABST	23	0403E	0456	0424	N06	E24	.405	11999	25.0	53D	-F		P	0424	.90	1.00		59	D 6
794 ATHN	23	0558	0611	0600	S04	E88	1.000	12005	29.8	13	-N	3	V						DE 6
796 ATHN	23	0642	0703	0649	S16	E50	.815	12002	27.0	21	-N	1		0649	.52	.64			5
797 ATHN	23	0700E	0708	0701	S04	E10	.256	12001	24.0	8D	-N	1		0701	.34	.33			4
798 HTPR	23	0813	0817	0814	S10	E52	.814	12002	27.2	4	-F		C	0814	.31	.60			E 6
801 PALE	23	1805	1811	1807	N11	E09	.170	11999	24.4	6	-F	3	C		.19				F 5
804 PALE	24	0147E	0148D	0148U	S15	E38	.690	12002	26.9	1D	-N	2	V		.72				DE 4
808 KODA	24	0420E	0430D	0420	N09	W03	.062	11999	24.0	10D	-B		V	0420	1.94	1.90	1.52		U 7
809 ATHN	24	0457	0509	0500	S18	E52	.839	12002	28.1	12	-F	3	C		.50				DE 4
810 ATHN	24	0557	0616	0601	S06	E90	1.000	12005	31.0	19	-F	3	C						DE 6
811 ATHN	24	0633E	0643	0635	S02	E12	.258	12001	25.2	10D	-F	3	C		.33				DE 6
GRP45813	24	1022	1028	1024	S03	E03	.181	12001	24.7	6	-F				.27				2 2 2 7
HTPR	24	1022	1028	1024	S02	E04	.171	12001	24.7	6	-F		C	1024	.21	.20			
ATHN	24	1023E	1028	1024	S03	E02	.177	12001	24.6	5D	-F	2	V		.33				DE
814 CATA	24	1055	1130	1055	N16	E90	.999	12007	31.2	35	-F		C	1055	.34			(127)	8
824 ARCE	25	0905E	0920D		S12	E70	.952	12005	30.6	15D	-F		C	0915	.13				11
825 ARCE	25	0910E	1005D		S15	E23	.526	12002	27.1	55D	-F		C	0920	.65	.80			12
826 MONT	25	1018	1026	1022	S16	E21	.515	12002	27.0	8	-N		C	1022	.52				7
831 HTPR	25	1349	1407	1356	N14	E87	.997	12007	1.1	18	-F		C	1356	.31				7
GRP45832	25	1540	1552	1544	N10	E80	.982	12007	31.7	12	-F				.31				2 2 2 7
HTPR	25	1540	1550	1544	N10	E80	.982	12007	31.7	10	-F		C	1544	.21				
CANR	25	1540	1554		N09	E79	.979	12007	31.6	14	-N	2	V	1543	.40	1.40			
833 MANI	25	2340	2357	2342	S04	W22	.416	12001	24.3	17	-F	2		2342	.41	.45			4
834 ABST	26	0514	0601	0537	N12	E80	.981	12007	1.2	47	1F		C	0537	.90			74	DZ 5
837 MONT	26	0954	0958	0956	S19	E03	.442	12002	26.6	4	-F		C	0956	.10				7
838 MONT	26	1034	1044	1037	N12	E79	.978	12007	1.4	10	-N		C	1037	.21				7
841 HTPR	26	1301	1325	1308	S15	E08	.398	12002	27.1	24	-F		C	1308	.41	.40			E 5
842 HTPR	26	1617E	1650	1637	N17	E06	.200	12008	27.1	33D	-F		C	1637	.21	.20			H 7
846 PALE	26	2300E	2313	2301	N16	E89	.999	12011	2.6	13D	-B	3	C		.45				F 5
847 MANI	26	2332E	2340	2332	N16	E90	.999	12011	2.7	8D	-N	2		2332	.41	1.34			4
850 TEHR	27	0309E	0318	0309U	S09	E60	.882	12012	31.6	9D	-F	3	V		.36				F 8

SOLAR FLARES
Unconfirmed

AUGUST 1972

OBSERVATORY	OBSERVED UT				LOCATION					DURATION	IMPORTANCE	OBS.		MEASUREMENTS					REMARKS
	1972 AUG	START	END	MAX. PHASE	APPROX. LAT.	APPROX. MER. DIST.	CENTRAL DISTANCE	MCMATH PLAGE REGION	CMP DAY	MIN.		CONG.	TYPE	TIME UT	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH Hα	MAX. INT. %	
GRP45851	27	0312	0327	0315	N10	E60	.860	12007	31.6	15	-F				.73				2 2 2 8
MANI	27	0310	0335	0315	N10	E59	.851	12007	31.6	25	-N	2		0315	.83	1.45			
MITK	27	0313	0319	0315	N10	E60	.860	12007	31.6	6	-F		C	0315	.62	1.30			E
852 ATHN	27	0453	0503	0457	N12	E58	.842	12007	31.6	10	-F	2	C		.50				DE 7
854 TEHR	27	0759E	0806	0759U	S09	E58	.866	12012	31.7	70	-F	3	V		.19				F 6
855 CATA	27	0915E	0925	0920	N17	E78	.972	12011	2.2	10D	-F		P	0920	.34			(1440)	9
857 TEHR	27	0942E	0956	0942U	S18	E12	.465	12002	28.3	14D	-F	3	V		.28				F 6
GRP45859	27	1054	1107	1054	S06	E39	.657	12005	30.4	13	-F				.30				2 2 2 6
TEHR	27	1054E	1105	1054U	S07	E39	.661	12005	30.4	11D	-F	3	V		.19				F
CAPS	27	1055E	1109D		S05	E39	.653	12005	30.4	14D	-N	3	V	1057	.40	.60		(170)	C
861 HTPR	27	1315	1332D	1327	N16	E76	.964	12011	2.3	17D	-F		C	1327	.21				D 6
862 HTPR	27	1446E	1455D	1447	N16	E76	.964	12011	2.3	9D	-F		C	1447	.21				D 8
865 PALE	27	2321E	2324D	2321U	N17	E77	.968	12011	2.7	3D	-N	3	V		.31				DE 3
GRP45866	27	2334	2340	2338	N14	E88	.998	12011	3.6	6	-N								1 1 0 4
CRON	27	2334	2340	2338	N14	E88	.998	12011	3.6	6	-N	2	V	2338					
CRON	27	2334	2340	2338	N14	E88	.998	12011	3.6	6	-N	2	V	2338					
868 PALE	28	0210	0228	0211	S07	E28	.519	12005	30.2	18	-N	2	V		.21				4
869 KODA	28	0243	0248	0243	S14	W18	.464	12002	26.8	5	-N		V	0243	.72	.70	1.40		D 6
871 VORO	28	0538	0550	0541	S08	W26	.500	12015	26.3	12	-B		C	0541	1.47	1.66		66	EJ 5
872 ABST	28	0639E	0644D	0641	S08	W26	.500	12015	26.3	5D	1F		P	0641	1.80	2.10		63	EZ 8
GRP45873	28	0647	0708	0650	N13	E70	.934	12011	2.5	21	-F				.29				2 2 2 9
CRON	28	0647	0703	0650	N13	E70	.934	12011	2.5	16	-F	3	V	0650	.25				
CRON	28	0647E	0703	0650	N13	E70	.934	12011	2.5	16D	-F	3	V	0650	.25				
ATHN	28	0650E	0712	0650U	N13	E70	.934	12011	2.5	22D	-F	3	V		.33				DE
874 ATHN	28	0749	0804	0753	S07	W28	.519	12015	26.2	15	-F	3	C		.50				DE 8
876 ARCE	28	0816	0820		S16	W17	.479	12002	27.1	4	-N		C	0817	.20	.20			9
GRP45878	28	0936	0942	0938	N17	E71	.939	12011	2.7	6	-F				.70				2 2 1 7
CANR	28	0936	0944	0938	N17	E72	.944	12011	2.8	8	-F	3	V	0938	.70	1.60			
ISTA	28	0936	0939		N16	E69	.927	12011	2.6	3	-N								
882 MONT	28	1108E	1141D	1111	S08	W29	.539	12015	26.3	33D	-N		C	1111	.72				5
884 RAMY	28	1310	1318	1312	N15	E51	.772	12007	1.4	8	-F	4	V		.99				DE 5
887 HUAN	28	1412	1415	1413	S16	W22	.526	12002	26.9	3	-F	1	C	1413	.36	.42			E 8
889 RAMY	28	1637E	1645	1637U	N15	E62	.876	12011	2.3	8D	-F	3	V		.46				DE 4
GRP45892	28	1755	1808	1758	N18	E66	.907	12011	2.7	13	-F				.18				2 2 2 6
BOUL	28	1755	1811	1757	N17	E66	.907	12011	2.7	16	-F	3	V	1757	.15	.30			
RAMY	28	1758E	1805	1758U	N18	E65	.899	12011	2.6	7D	-N	3	V		.21				DE
893 MCMA	28	1826	1840	1827	N18	E37	.611	12007	31.5	14	-F		C	1827	.26	.30			E 4
899 ABST	29	0356	0406	0402	S07	W40	.673	12015	26.2	10	-N		C	0402	.90	1.20		82	D 6
900 ABST	29	0455E	0514D	0459	S07	W40	.673	12015	26.2	19D	-F		P	0459	.90	1.20		74	D 4
GRP45902	29	0559	0619	0601	N15	E55	.813	12011	2.4	20	-F				.70				2 2 2 7
CRON	29	0559E	0608	0559U	N15	E56	.823	12011	2.4	9D	-F	3	V	0559	.55				
CRON	29	0559E	0608	0559D	N15	E56	.823	12011	2.4	9D	-F	3	V	0559	.55				
ATHN	29	0602E	0630	0602	N14	E53	.793	12011	2.2	28D	-F	1		0602	.85	1.07			
GRP45903	29	0706	0721	0714	N14	E55	.813	12011	2.4	15	-F				1.14				2 2 2 6
HTPR	29	0700	0721	0714	N13	E56	.823	12011	2.5	21	-F		C	0714	.21	.30			
ABST	29	0711	0714D	0713	N14	E54	.803	12011	2.3	3D	1F		P	0713	2.07	3.40		74	E
GRP45908	29	0845	0915	(0849)	S14	W41	.717	12015	26.3	30	-F				1.63				2 2 2 11
KHAR	29	0845E	0915D		S13	W42	.723	12015	26.2	30D	1F		P	0853	3.84	3.60			
HTPR	29	0845E	0936D		S14	W39	.696	12015	26.4	21D	-F		C	0845	.21	.30			B
909 ATHN	29	0926E	0934	0927	N16	E55	.814	12011	2.5	8D	-N	1		0927	.34	.51			9

SOLAR FLARES
Unconfirmed

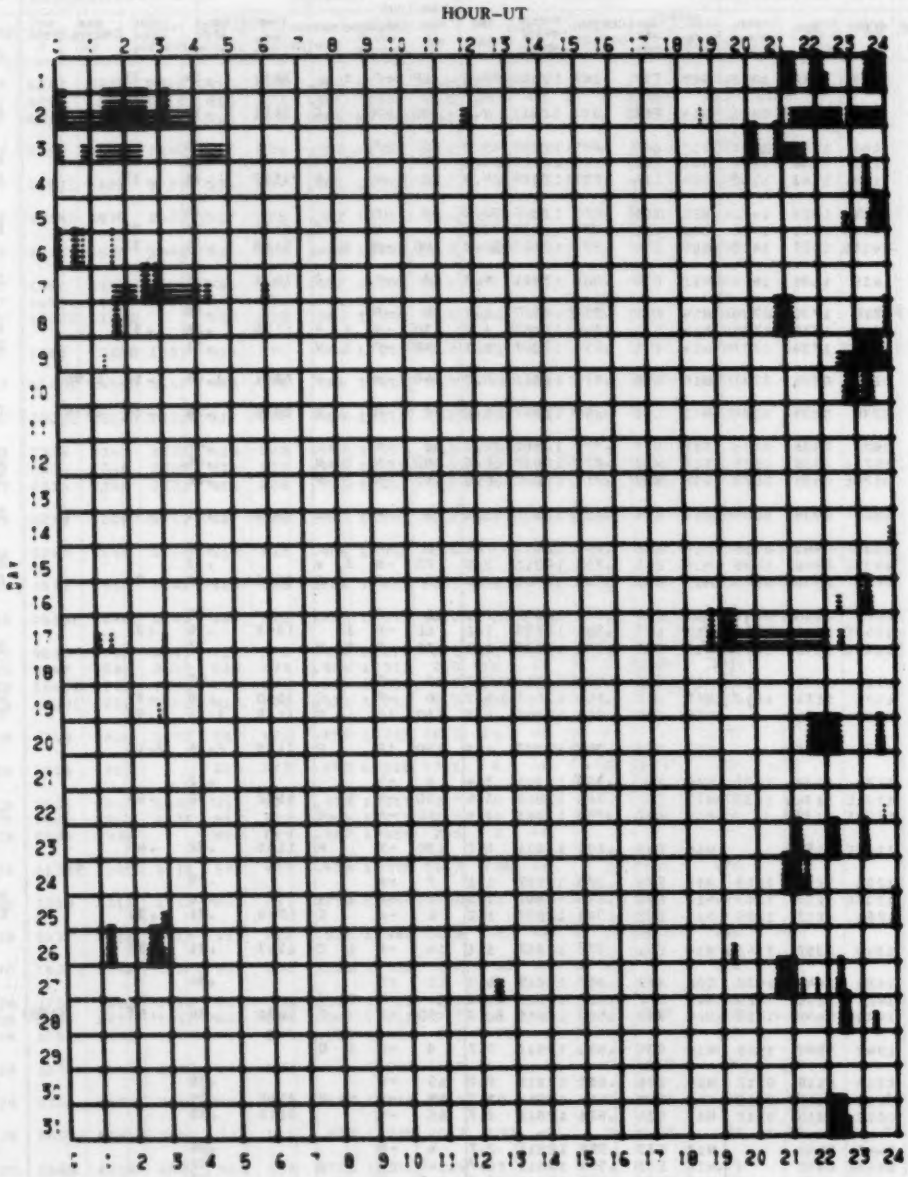
AUGUST 1972

OBSERV-ATORY	OBSERVED UT 1972 AUG	START	END	MAX. PHASE	LOCATION APPROX. LAT.	APPROX. MER. DIST.	CENTRAL DISTANCE	NOAA PLAGE REGION	CMP DAY	DURATION — MIN.	IMPORTANCE	OBS. COND.	OBS. TYPE	MEASUREMENTS TIME — UT	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH Hg	MAX. INT. %	REMARKS
911 ATHN	29	1010E	1015	1011	S08	E07	.287	12005	29.9	5D	-F	1		1011	.34	.33			7
912 HTPR	29	1112	1140D	1121	N14	E56	.823	12011	2.7	28D	-N		C	1121	.10	.20			D 10
GRP45913	29	1140	1150	1141	S07	E05	.259	12005	29.9	10	-F				.32				2 2 2 12
RAMY	29	1139	1146	1140	S07	E05	.259	12005	29.9	7	-F	3	C		.33				DE
MCMA	29	1141	1153	1142	S06	E04	.237	12005	29.8	12	-N		C	1142	.31	.30			E
GRP45920	29	1416	1429	1420	S05	E05	.227	12005	30.0	13	-N				.28				2 2 2 7
MCMA	29	1416	1430	1420	S05	E05	.227	12005	30.0	14	-N		C	1420	.21	.20			EH
ATHN	29	1418S	1427	1419	S05	E05	.227	12005	30.0	9D	-N	1		1419	.34	.33			
922 MCMA	29	1619	1631	1621	N11	E75	.961	12011	4.3	12	-F		C	1621	.15				D 5
GRP45924	29	1710	1739	1726	N14	E32	.532	12007	1.1	29	-F				.29				2 2 2 5
HUAN	29	1710	1730D	1725U	N14	E33	.546	12007	1.2	20D	-N	1	P	1725	.26	.31			D
RAMY	29	1725E	1739D	1727U	N14	E31	.518	12007	1.1	14D	-F	2	V		.31				DE
930 KODA	30	0231E	0235	0231	N15	E55	.813	12011	3.2	4D	-N		V	0231	1.09	1.10	1.96		6
931 KODA	30	0236	0239	0237	N12	E30	.499	12007	1.4	3	-B		V	0236	.74	.70	2.24		D 5
GRP45933	30	0528	0538	0529	S17	W57	.877	12002	26.0	10	-N				.66				1 1 1 6
ATHN	30	0528E	0538	0529	S17	W57	.877	12002	26.0	10D	-N	2	V		.66				DE
ATHN	30	0528E	0538	0529	S17	W57	.877	12002	26.0	10D	-N	3	V		.66				DE
935 HTPR	30	0901	0908	0905	N13	E25	.427	12007	1.3	7	-F		C	0905	.31	.40			S 7
GRP45936	30	0934	0940	0935	N18	E45	.708	12011	2.8	6	-F				.22				2 2 2 8
ATHN	30	0933E	0940	0935	N18	E45	.708	12011	2.8	7D	-N	3	V		.33				DE
HTPR	30	0934	0939	0935	N18	E45	.708	12011	2.8	5	-F		C	0935	.10	.20			D
GRP45938	30	1040	1046	1040	N13	E22	.381	12007	1.1	6	-F				.34				1 1 1 7
ATHN	30	1040E	1046	1040	N13	E22	.381	12007	1.1	6D	-F	3		1040	.34	.33			
ATHN	30	1040E	1046	1040U	N13	E22	.381	12007	1.1	6D	-F	2	V		.33				DE
GRP45939	30	1108	1120	1110	N13	E65	.900	12011	4.3	12	-F				.62				2 2 2 6
HTPR	30	1108	1114	1110	N15	E65	.899	12011	4.3	6	-F		C	1110	.10	.20			D
KHAR	30	1108	1126D		N10	E65	.901	12011	4.3	18D	1F		P	1115	1.13	2.50			D
940 KHAR	30	1130E	1140D		N12	E21	.363	12007	1.1	10D	1F		P	1138	2.84	3.00			6
GRP45941	30	1131	1139	1132	N16	E52	.783	12011	3.4	8	-N				.52				2 2 1 5
ATHN	30	1131E	1134U	1132	N17	E52	.784	12011	3.4	3D	-N	3		1132	.52	.60			
KHAR	30	1133E	1139D		N14	E52	.782	12011	3.4	6D	-N		V						D
942 ARCE	30	1140E	1150D		N16	E43	.681	12011	2.7	10D	-N		P	1150	.32	.40			7
GRP45943	30	1206	1213	1208	N14	E21	.370	12007	1.1	7	-N				.29				2 2 2 6
RAMY	30	1205E	1213	1207	N14	E20	.355	12007	1.0	8D	-N	2	V		.26				DE
MCMA	30	1206	1212	1209	N13	E22	.381	12007	1.2	6	-N		C	1209	.31	.30			E
946 HUAN	30	1340	1350	1343U	N14	E21	.370	12007	1.1	10	-F	1	C	1343	.31	.33			5
GRP45948	30	1426	1443	1430	S06	W58	.860	12015	26.3	17	-F				.34				2 2 1 5
BOUL	30	1426	1450	1429	S06	W57	.851	12015	26.3	24	-F	2	V						
CATA	30	1430E	1435	1430	S06	W58	.860	12015	26.3	5D	-N		P	1430	.34	.67		(195)	
957 HUAN	30	1942	1951	1945	N16	E39	.631	12011	2.7	9	-F	1	C						4
GRP45960	31	0010	0115	0112	N19	E36	.601	12011	2.7	65	-N				.30				1 1 1 5
CRON	31	0010	0115	0112	N19	E36	.601	12011	2.7	65	-N	1	V	0112	.30				
CRON	31	0010	0115	0112	N19	E36	.601	12011	2.7	65	-N			0112	.30				
GRP45962	31	0448	0452		N18	E33	.558	12011	2.7	4	-N				.30				1 1 1 5
CRON	31	0448E	0452		N18	E33	.558	12011	2.7	4D	-N	3	V		.30				
CRON	31	0448E	0452		N18	E33	.558	12011	2.7	4D	-N				.30				
963 CATA	31	0705	0715	0705	N13	E10	.198	12007	1.0	10	-N		C	0705	.69	.71		(170)	6
GRP45964	31	0719	0725	0720	N16	E32	.538	12011	2.7	6	-N				.55				2 2 2 8
MONT	31	0718	0725	0720	N16	E33	.551	12011	2.8	7	-N		C	0720	.52				
CATA	31	0720	0725	0720	N15	E31	.521	12011	2.6	5	-N		C	0720	.58	.60		(160)	
965 MONT	31	1120	1124	1122	N16	E11	.241	12007	1.3	4	-N		C	1122	.41				8
966 CATA	31	1150	1155	1150	N04	E01	.058	12007	31.6	5	-N		C	1150	.34	.35		(155)	8
969 MCMA	31	1315	1328	1317	S06	W24	.459	12005	29.8	13	-N		C	1317	.31	.30			DH 6
970 RAMY	31	1357	1412	1359	S05	W22	.424	12005	29.9	15	-F	2	C		.46				DE 6
971 MCMA	31	1458	1519	1501	N15	W02	.140	12007	31.5	21	-N		C	1501	.41	.40			E 5

INTERVALS OF NO FLARE PATROL OBSERVATION

FOR PRECEDING SOLAR FLARE TABLE

AUGUST 1972



Observatories included in total patrol:

Abastumani	Capri-S (Sweden)	Herstmonceux	Manila	Siberie
Arcetri	Carnarvon	Huancayo	McMath-Hulbert	Tachkent
Athenes	Catania	Istanboul	Mitaka	Tehran
Boulder	Culgoora	Kharkov	Monte Mario	Upice
Bucharest	Gran Canaria	Kiev	Ondrejov	Voroshilov
Capri-F (German)	Haute Provence	Kodaikanal	Palehua	Wendelstein
		Locarno	Ramey	Zürich

Times of no flare patrol are shown by the shaded area for each day divided into times of no cinematographic patrol (bottom half of day) and times of neither visual nor cinematographic patrol (top half of day).

SOLAR RADIO EMISSION
OUTSTANDING OCCURRENCES

AUGUST 1972

AUG 1972	FREQUENCY	STATION	TYPE	STARTING TIME UT	TIME OF MAXIMUM UT	DURATION MINUTES	FLUX DENSITY 10^{-22} Wm^{-2} Hz^{-1} PEAK	FLUX DENSITY 10^{-22} Wm^{-2} Hz^{-1} MEAN	INT	REMARKS
1	9750	IRKU	20	0040	0047	55	9.8	5.6		
	9750	IRKU	1	0109	0111.7	6	9.8	1.3		
	9750	IRKU	20	0120	0124		15.4			
	9750	IRKU	20	0120	0143	18	19.6	7.8		
	2695	PENT	--	0135	0147	20 D	7.2			
	9100	GORK	22	0239.9	0244.5	7.8	15.0	4.7		
	9750	IRKU	1	0240	0244	10	23.0	6.8		
	9100	GORK	20	0302.4	0307.2	19.2	23.0	11.0		
	9750	IRKU	1	0331	0334	5	11.0	5.6		
	9750	IRKU	20	0340	0342	18	15.0	5.6		
	2000	TYKW	8	0412	0412.3	1	130.0	25.0		
	200	GORK	41	0426.7	0427.8	11	180.0			
	200	GORK		0426.7	0432.6		300.0			
	200	GORK		0426.7	0434.9		300.0			
	200	HIRA	6	0426.5	0432.5	10	220.0	15.0		
	113	POTS	45	0426.5	0427.9	13.5	700.0	15.0		
	100	GORK	41	0426.5	0427.8	13.8	1000.0			
	100	GORK		0426.5	0432.8		250.0			
	100	GORK		0426.5	0435		200.0			
	100	GORK		0426.5	0438		250.0			
	100	HIRA	6	0426.4	0428	16	120.0	20.0		
	23	POTS	45	0426.5	0428.2	6	5000.0	140.0		
	100	GORK	24	0443.3	0515	42	25.0	7.0		
	9500	BERL	21	0457 U	0610 U	380 U	32.0			
	9750	IRKU	40	0524	0631.2	76	43.0			
	808	ONDR	5	0639	0639	.5				
	9400	TYKW	45	0645	0658.6	70	300.0	35.0		
	3750	TYKW	45	0645	0720	70	11.0	6 .0		
	9285	ARCE	21	0646.2U	0647.8	84.5U				
	9750	IRKU	3	0652	0658.8	23	308.0			
	9500	BERL	4	0656 U	0658.5	47 U	249.0			
	9400	SLOU	4	0656	0658.6	8	319.0			
	9400	SLOU	46	0656	0658.6	49				
	9285	ARCE	3	0656.8	0658.9	4.4				
	9500	HIRA	45	0657	0658.2	.6				
	9100	GORK	3	0657.6	0658.8	53.4	390.0	58.0		
	19000	SLOU	4	0658	0659	4	298.0			
	9285	ARCE	29	0701.2		42				
	9100	GORK	29	0703	0703	48	64.0	33.0		
	536	ONDR	5	0709.5	0709.5	.5	50.0			
	9750	IRKU	20	0721	0725	14	78.0	33.0		
	9500	BERL		0723 E	0723		61.0			
	23	POTS	8	0745.3	0745.4	.4	2000.0	700.0		
	9750	IRKU	20	0754	0759	6	26.0	16.0		
	200	GORK	6	0836.6	0838.3	6.8	300.0			
	100	GORK	6	0836.1	0840.8U	7.7	50.0D			
	100	HIRA	6	0836.5	0839.8	7	220.0	130.0		
	9500	BERL	4	0838	0840.7	12	126.0			
	9400	SLOU	3	0838.5	0841.1	10	156.0			
	1420	CANR	3	0838.5	0839.5	6.5	4.0	1.0		
	210	IZMI	6	0838	0839.2	3	480.0	200.0		
	200	HIRA	6	0838	0839.8	4	750.0	100.0		
	29	UPIC	45	0838		5.5				
	260	ONDR	45	0838.5		4	60.0D			
	237	TRST	42	0838	0839.6	2.5	3200.0			
	225	HARS	45	0838		4	75.0D			
	19000	SLOU	3	0839.5	0840.7	4	290.0			
	9500	HIRA	45	0839	0840	4.5				
	9285	ARCE	3	0839.5	0841	7.7				
	9100	GORK	3	0839	0840.9	132.4	113.0	36.0		
	1500	BERL	1	0839	0840	2.3	3.2	1.0		
	23	POTS	45	0839.2	0839.8	2.7	20000.0	3000.0		
	950	GORK	1	0839.7	0839.8	1.2	3.0	1.5		
	650	GORK	1	0839.2	0839.7	1.8	2.7	1.9		
	234	POTS	45	0839.4	0839.6	.6	2000.0	400.0		
	37000	SLOU	3	0840	0841.1	2	100.0			
	9100	GORK	30	0841.4	0841.4	130	82.0	27.0		
	9500	BERL	22	0842	0925.5	94	110.0			
	100	GORK	44	0852.7		247 D		5.0		
	9285	ARCE	23	0906.9	0956.7U					
	100	GORK	6	0906.2	0908.1	2.4	1400.0			
	100	HIRA	6	0906	0907.3	2.5	180.0	30.0		
	210	IZMI	41	0907	0907.9	1	75.0			
	23	POTS	41	0907.2	0907.4	1.3	4000.0	500.0		
	2830	ARCE	20	0909.6	0957.5	105				
	9400	SLOU	45	0915	0925.8	38	105.0			
	9285	ARCE	45	0916.8	0925.8	16.6				
	9285	ARCE		0916.8	0918.2	2.8				
	9285	ARCE		0919.6	0925.8	13.8				
	19000	SLOU	45	0917.5	0921.7	24	453.0			
	19000	SLOU		0917.5	0925.9		238.0			
	9100	GORK	46	0917	0918	15.9	49.0	27.0		
	9100	GORK		0917	0925.6		70.0			
	37000	SLOU	3	0920	0921	1.5	45.0			
	4995	CANR	3	0954	0956	3	4.0	2.0		
	100	GORK	41	0955.2	0955.8	39.5	50.0			
	100	GORK		0955.2	1012.9		50.0			
	100	GORK		0955.2	1018.6		50.0			
	260	ONDR	45	1016	1017	1	75.0			
	808	ONDR	5	1017.5	1017.5	.5				

SOLAR RADIO EMISSION
OUTSTANDING OCCURRENCES

AUGUST 1972

AUG 1972	FREQUENCY	STATION	TYPE	STARTING TIME UT	TIME OF MAXIMUM UT	DURATION MINUTES	FLUX DENSITY 10^{-22} Wm^{-2} Hz^{-1} PEAK	FLUX DENSITY MEAN	INT	REMARKS
1	536	ONDR	5	1017	1017	.5	55.0			
	9500	BERL	20	1032	1034.5	19	27.0			
	100	GORK	41	1041.3	1041.5U	2.5	50.0D			
	100	GORK		1041.3	1042.6		40.0			
	100	GORK		1041.3	1043.2		50.0			
	930	BORD	45	1048	1049.3	4	31.0	8.0		
	9500	BERL	22	1129	1150	38	24.0	10.0		
	4995	CANR	3	1129	1136.5	18.5D	12.0	3.0		
	9400	SLOU	45	1130	1137.2	33	51.0			
	9285	ARCE	45	1130 U	1137.2	27 U				
	9100	GORK	22	1132.7	1137.2	24.7	32.0	11.0		
	100	GORK	6	1145.1	1150.6U	6.5	2500.0			
	9400	HUAN	20	1146.6	1149.5	67.4	36.3	20.8		
	4995	CANR	21	1147.5	1148.5	29	27.0	6.0		
	2695	CANR	3	1147.5	1150	20	70.0	22.0		
	2695	SGMR	3	1147.5	1149.5	7.8	79.0	20.0		
	1420	CANR	3	1147.5	1149.5	5.5	29.0	12.0		
	210	IZMI	6	1147.5	1149	4.5	190.0	100.0		
	200	GORK	6	1147.4	1148.7	4.7	300.0D			
	18	MCMA	6	1147	1150	9			2	
	410	SGMR	6	1147.9	1149.2	3.6	100.0	26.0		
	237	TRST	42	1147.6	1148.7	3.5	1200.0			
	237	TRST		1147.6	1149.1		1400.0			
	245	SGMR	6	1147.6	1148.9	5.4	180.0	45.0		
	15400	SGMR	20	1148.5	1149.8	10	14.0	6.9		
	8800	SGMR	4	1148.6	1149.7	7.8	22.0	5.4		
	7000	SAOP	3	1148.7	1149.6	1.5	25.9	15.9		
	4995	SGMR	4	1148.5	1149.5	8.7	33.0	8.3		
	2950	GORK	4	1148.5	1149.6	5.1	86.0	33.0		
	2830	ARCE	3	1148.6	1149.7	5				
	2800	OTTA	3	1148	1149.2	4	60.0	21.0		
	1500	BERL	4	1148	1149.5	4.5	25.0	9.0		
	1415	SGMR	4	1148.4	1149.5	5.6	22.0	5.6		
	113	POTS	45	1148.2	1149	2.9	6500.0	1200.0		
	29	UPIC	45	1148		4				
	23	POTS	45	1148.3	1149.5	4.1	50000.0U	1000.0U		
	950	GORK	4	1148.7	1149.4	6.4	19.3	4.4		
	650	GORK	4	1148.5	1149.5	5.5	17.7	4.6		
	606	SGMR	4	1148.4	1149.2	4.2	18.0	4.4		
	408	TRST	45	1148.5	1149.2	2.1	150.0	37.0		
	260	ONDR	45	1148.5	1150	5.5	90.0D			
	234	POTS	45	1148.7	1148.7	.6	250.0	4.0		
	225	HARS	45	1148		3.5	75.0D			
	536	ONDR	45	1150	1151	5.5	45.0			
	7000	SAOP	29	1150.2		6				
	2800	OTTA	29	1152		17	3.8	1.9		
	200	GORK	6	1210.3	1210.6	.5	100.0	40.0		
	100	GORK	6	1210.2	1210.5U	.7	50.0D			
	410	SGMR	6	1210.4	1210.5	.3	5.4	1.1		
	260	ONDR	45	1210	1212	2	30.0			
	237	TRST	41	1210.2	1210.4	.4	170.0			
	245	SGMR	6	1210.2	1210.4	.7	29.0	7.2		
	100	GORK	41	1225	1226.3	3.8	50.0			
	100	GORK		1225	1227.7		30.0			
	200	GORK	6	1226	1226.2	.2	20.0	5.0		
	10700	PENN	3	1229.7	1236.9	35.7	37.8	16.3		
	9285	ARCE	22	1243.8	1305	110				
	9100	GORK	22	1243.5	1244.3	10.5	17.0	7.5		
	2830	ARCE	20	1244.7	1246.9	110				
	9500	BERL	20	1245	1305	76	24.0	8.4		
	9400	HUAN	20	1246.4	1304.8	31.9	23.6	10.1		
	2700	PENN	45	1248.1	1249.5	4.1	86.4	31.6		
	960	PENN	45	1248.5	1249.5	4.9	17.0	5.7		
	10700	PENN	20	1249.9	1303.8	26.8	14.7	7.6		
	9100	GORK	22	1301.2	1302.9	5.8D	17.0			
	113	POTS	8	1306.5	1306.6	.5	850.0	280.0		
	23	POTS	43	1306.5	1306.7	.7	8000.0	1200.0		
	245	SGMR	6	1306.4	1306.8	.5	6.6	1.6		
	2800	OTTA	20	1330	1345	60	2.2	1.1		
	245	SGMR	43	1410	1920.5	588 D	30.4			
	10700	PENN	3	1444.9	1457.6	23.6	26.4	8.6		
	9500	BERL	22	1446	1454	30	19.0	5.2		
	8800	SGMR	20	1450.2	1454	18.5	15.0	7.5		
	15400	SGMR	46	1451.1	1457.6	16.3	73.0	18.0		
	10700	PENN	3	1523.4	1532.3	41.1	46.7	12.4		
	9500	BERL	22	1523	1532	30	32.0	8.4		
	8800	SGMR	20	1523.7	1532	24	37.0	18.0		
	15400	SGMR	46	1524.8	1532	22.6	48.0	12.0		
	9400	HUAN	3	1530.4	1532.3	15.7	29.1	10.0		
	9285	ARCE	3	1530.6	1532.4	22				
	2800	OTTA	20	1530	1545	75				
	113	POTS	45	1536.9	1537.6	.8	2.8	1.4		
	18	MCMA	6	1536	1536	3	700.0	20.0	2	
	15400	SGMR	45	1613.3	1614.3	14.3	24.0	11.0		
	15400	SGMR	45	1613.3	1616.2	14.3	24.0	11.0		
	10700	PENN	20	1613.5	1614.4	12.7	9.3	4.7		
	8800	SGMR	1	1613.9	1616.8	9.9	7.2	3.5		
	15400	SGMR	3	1628.1	1628.3	.9	29.4	11.6		
	10700	PENN	3	1653.2	1658.8	32.9	46.7	9.9		
	15400	SGMR	3	1655.5	1658.3	26.5	106.1	42.0		

SOLAR RADIO EMISSION
OUTSTANDING OCCURRENCES

AUGUST 1972

AUG 1972	FREQUENCY	STATION	TYPE	STARTING TIME UT	TIME OF MAXIMUM UT	DURATION MINUTES	FLUX DENSITY 10^{-22} Wm^{-2} Hz^{-1} PEAK	FLUX DENSITY 10^{-22} Wm^{-2} Hz^{-1} MEAN	INT	REMARKS
1	19000	SLOU	3	1657.5	1658.6	3	74.0			
	9400	HUAN	20	1657	1658.2	18.7	27.2	7.3		
	9400	SLOU	3	1657	1658.5	6	31.0			
	2800	OTTA	22	1805	1915	165	13.2	6.6		
	2695	SGMR	20	1807.3	1843	102.4	11.9	5.3		
	9400	HUAN	20	1811.2	1821.9	16.1	21.8	7.4		
	15400	SGMR	3	1821.7	1821.9	1.9	19.5	8.0		
	10700	PENN	3	1821.6	1821.9	4.2	19.4	3.2		
	8800	SGMR	3	1821.4	1822	1.5	12.6	4.4		
	4995	SGMR	1	1821.7	1821.9	6.4	3.8	1.9		
	2700	PENN	3	1825.1	1843.1		20.6			
	1415	SGMR	20	1834.9	1843.1	12.6	1.9	1.0		
	10700	PENN	20	1835.4	1841.8	14.4	12.2	6.1		
	9400	HUAN	20	1835.1	1843	20.8	23.6	7.9		
	8800	SGMR	20	1835.6	1842.9	12	22.4	10.0		
	15400	SGMR	20	1836.8	1841.6	10.7	14.0	7.0		
	4995	SGMR	5	1836.9	1842.9	9.9	10.3	5.1		
	960	PENN	1	1842.4	1843	1.6	2.6	0.5		
	9400	HUAN	20	1908.2	1917.2	27.2	18.2	3.5		
	2800	OTTA	21	2110	2145	85	2.4	1.2		
	4995	BOUL	3	2115	2117	4.5	16.0	5.0		
	100	HIRA	6	2117.5	2119.4	9	230.0	60.0		
	1415	SGMR	1	2118.8	2119.5	3.5	6.8	3.4		
	208	VORO	7	2118.8	2119.8	2	80.0	44.0		
	200	HIRA	6	2118.5	2119.2	2	140.0	50.0		
	18	BOUL	6	2118	2123	6			3	
	18	MCMA	6	2118	2122	6			3	
	960	PENN	1	2118.5	2119.5	2.2	4.9	1.7		
	606	SGMR	1	2118.3	2119.1	1.7	2.4	1.2		
	410	SGMR	6	2118.7	2123.8	8.6	65.0	26.0		
	245	SGMR	6	2118.4	2119.3	6.7	68.3	26.2		
	2800	OTTA	1	2119	2119.5	2	4.6	2.0		
	2700	PENN	1	2119.3	2119.5	1.6	9.2	2.7		
	2695	BOUL	8	2119	2120	2	5.0	2.0		
	2695	SGMR	1	2119.3	2119.5	.7	4.5	2.2		
	1420	BOUL	21	2119	2120	9.5	10.0	2.0		
	15400	SGMR	3	2215.5	2216.9	6.6	46.3	18.0		
	10700	PENN	3	2215.7	2217	7.1	40.3	12.7		
	9400	TYKW	3	2215.5	2217	2.5	38.0	15.0		
	9400	HUAN	3	2215.9	2216.8	3.2	29.6	11.6		
	3750	TYKW	1	2215.5	2217	2.5	7.0	3.0		
	9400	TYKW	29	2218		15	7.0	3.0		
	3750	TYKW	29	2218		15	2.0	1.0		
	2695	PENT	20	2240	2325	85	4.4	2.2		
2	2695	PENT	21	0015	0130	100 D	13.0			
	100	HIRA	6	0039.6	0040.4	1.5	90.0	30.0		
	208	VORO	41	0049.5	0103.2	20.5	100.0			
	100	HIRA	6	0111.2	0111.8	1	110.0	40.0		
	9750	IRKU	3	0139.7	0140.5	19	107.0	17.0		
	9400	TYKW	3	0139.5	0140.2	9	75.0	20.0		
	8800	MANI	3	0139.5U	0140.5	7.7U	39.8	21.1U		PEAKING
	4995	MANI	3	0139.5U	0140.5	6 U	12.2	4.6U		PEAKING
	2695	MANI	1	0139.7U	0140.4	2.6U	5.4	1.1U		PEAKING
	2695	PENT	2	0139.8	0140.4	1.2	7.2	3.4		
	9400	TYKW	45	0206	0208.9	9	44.0	8.0		
	3750	TYKW	1	0206	0207	8	8.0	3.0		
	9750	IRKU	3	0208.5	0109.1	3	35.6	8.5		
	9100	GORK	41	0208.4	0209.2	6	34.0			
	9100	GORK		0208.4	0213.6		12.0			
	200	HIRA	45	0215	0339.5	210	270.0	40.0		
	9100	GORK	21	0237.9	0356.7	309.3	660.0			
	100	HIRA	6	0242.5	0245.7	5.5	130.0	60.0		
	100	HIRA	6	0248.2	0248.5	1.6	140.0	50.0		
	2950	GORK	21	0300 E		481	80.0U			
	200	GORK	44	0300 E		300		10.0		
	100	GORK	44	0300 E		600 D		15.0		
	9400	TYKW	28	0303	0308.2	7	15.0	8.0		
	3750	TYKW	28	0303	0308.2	7	8.0	4.0		
	9750	IRKU	45	0304	0404	120 U	2100.0			
	4995	CRON	47	0305	0405	163.5	1453.0	284.0		
	2695	CRON	47	0305.5	0405	202	1833.0	274.0		
	8800	MANI	47	0309.5U	0330.3	63.1U	1750.0U	760.0U		WX
	4995	MANI	47	0309.5U	0404.5	62.4U	2200.0U	1020.0U		WX
	9500	HIRA	47	0310	0330	106				
	9500	HIRA		0310	0404					
	9400	TYKW	47	0310	0404.2	120	2330.0	630.0		
	3750	TYKW	47	0310	0404.9	120	2600.0	550.0		
	2950	GORK	46	0310	0355.6U	50 U	2500.0D			
	2000	TYKW	47	0310	0405	115	1610.0	430.0		
	2695	MANI	47	0311.2U	0404.8	60.7U	2200.0U	980.0U		WX
	1415	MANI	47	0312.4U	0406.8	59.5U	1060.0U	370.0U		WX
	1000	TYKW	45	0312	0407.2	125	625.0	200.0		
	950	GORK	47	0312	0332.2	245.4	580.0	210.0		
	950	GORK		0312	0407.4		530.0			
	950	GORK		0312	0437.9		540.0			
	650	GORK	47	0312	0334.7	205	787.0			
	650	GORK		0312	0340.6U		1500.0D			
	606	MANI	47	0312.4U	0340.5	90.2U	3000.0U	680.0U		WX
	500	HIRA	45	0312.5	0319.5	128	380.0	230.0		

SOLAR RADIO EMISSION
OUTSTANDING OCCURRENCES

AUGUST 1972

AUG 1972	FREQUENCY	STATION	TYPE	STARTING TIME UT	TIME OF MAXIMUM UT	DURATION MINUTES	FLUX DENSITY 10^{-22} Wm^{-2} Hz^{-1} PEAK	FLUX DENSITY MEAN	INT	REMARKS
2	500	HIRA		0312.5	0325.3		600.0			
	500	HIRA		0312.5	0329.3		800.0			
	500	HIRA		0312.5	0333.8		700.0			
	9100	GORK	46	0313.5	0328	59.4	912.0			
	9100	GORK		0313.5	0331.6		1024.0			
	9100	GORK		0313.5	0404.2		1190.0			
	100	GORK	24	0342	0356.8	51	2000.0	600.0		
	234	POTS	45	0351 E	0351 U		200.0U			
	1420	CRON	47	0359	0407.5	242	986.0	150.0		
	9500	BERL	46	0400 E	0404	360 D	2120.0U			
	1500	BERL	46	0400 E	0404	330 D	1260.0D			
	113	POTS	45	0410 E	0410 U		700.0U			
	4995	MANI	29	0411.9	0411.9	164.8U	820.0U	245.0U		WX
	2695	MANI	29	0411.9	0411.9	176.1U	880.0U	300.0U		WX
	1415	MANI	29	0411.9	0411.9	151.4U	606.0U	181.0U		WX
	9100	GORK	29	0412.9	0412.9	204	720.0	360.0		
	606	MANI	29	0442.6	0442.6	117.2U	620.0U	265.0U		WX
	650	GORK	30	0500 U	0500 U	97	38.0			
	2000	TYKW	29	0505		175 D	55.0	25.0U		
	950	GORK	29	0506	0506	131.4	35.0	10.0		
	9400	TYKW	29	0510		170 D	170.0	40.0U		
	3750	TYKW	29	0510	0510	170 D	55.0	30.0U		
	1000	TYKW	29	0517		163 D	25.0	12.0U		
	650	GORK	41	0620.7	0621.8	2.8	11.2			
	650	GORK		0620.7	0623		2.9			
	650	GORK	40	0626.5	0626.8	4.7	4.7			
	650	GORK	40	0633.5	0636.9	3.7	2.9			
	200	GORK	6	0707.1	0707.6	1.5	300.0			
	9285	ARCE	2	0735.5	0740.3	8				
	2830	ARCE	2	0739.7	0740.1	1.7				
	200	GORK	44	0800		300 D		5.0		
	210	IZMI	6	0811.5	0811.7	.5	68.0	40.0		
	410	SGMR	44	0941 E		897 D				
	245	SGMR	44	0941 E		897 D				
	4995	CANR	21	1041.5	1044.5	27.5	25.0	5.0		
	2695	CANR	21	1043.5	1045.5	14.5	39.0	12.0		
	1420	ARCE	21	1043.5	1059	49				
	15400	SGMR	3	1044.6	1045.3	9.4	38.0	9.5		
	9500	BERL	4	1044 U	1045.3	8 U	72.0			
	9400	SLOU	4	1044.5	1045.8	3	124.0			
	9285	ARCE	3	1044.7	1045.6	6				
	9100	GORK	3	1044	1045.3	1.9	65.0	32.0		
	2950	GORK	3	1044.6	1045.2	2.3	39.0	14.2		
	2830	ARCE	4	1044.7	1045.2	9.3				
	2800	OTTA	4	1044.7	1045	2	30.0	12.0		
	1500	BERL	46	1044	1045.2	54 U	26.0			
	1420	ARCE	3	1044	1045.4	2				
	1420	CANR	45	1044.5	1045.5	5	29.0	7.0		
	1415	SGMR	46	1044.6	1045.4	6.9	25.0	6.3		
	950	GORK	46	1044.7	1046	2.1	25.0D	8.0		
	930	BORD	45	1044	1046	3	92.0	4.0		
	19000	SLOU	4	1045	1046	1.8	37.0			
	3100	CRIM	3	1045	1046	45	13.0	4.0		
	606	SGMR	1	1045.2	1045.5	3.7	4.2	1.1		
	9100	GORK	29	1046.5	1046.5	37.1	17.0	8.5		
	2800	OTTA	29	1046.7		110	8.8	4.4		
	1420	ARCE	2	1048	1048.3	1				
	536	ONDR	5	1153	1153.5	1.5	60.0			
	260	ONDR	45	1235	1236	3	20.0			
	2800	OTTA	20	1240	1310	50	2.4	1.2		
	1420	ARCE	4	1246.5	1246.8	4				
	260	ONDR	45	1304	1305	4.5	35.0			
	2800	OTTA	20	1340	1415	65	2.4	1.2		
	9285	ARCE	22	1357.3	1402.2	16				
	2830	ARCE	20	1357.6	1403.1	14.5				
	1420	ARCE	2	1403.3	1404	2.5				
	113	POTS	45	1429.7	1430.5	1.2	300.0	25.0		
	930	BORD	45	1429	1430.2	3	15.0	3.0		
	606	SGMR	3	1429.6	1430.2	1.5	30.0	7.5		
	410	SGMR	7	1429.4	1430.2	2.6	320.0	78.0		
	2800	OTTA	22	1450	1525	95	2.4	1.2		
	225	HARS	45	1451	1525	47	40.0	10.0		
	18	MCMA	6	1521	1524	5			2	
	245	SGMR	6	1521	1525.2	18	110.0	27.0		
	18	BOUL	6	1522	1524	4			2	
	606	SGMR	4	1522	1524.8	14.2	110.0	27.0		
	1500	BERL	3	1523.7	1524.7	2	9.4			
	1415	SGMR	22	1523.2	1524.8	15.7	9.4	4.7		
	930	BORD	45	1523	1524.7	3	97.0	6.0		
	410	SGMR	48	1523.2	1524.9	12.4	710.0	160.0		
	245	BOUL	41	1523	1526	6.5			2	
	245	BOUL		1523	1532					
	1420	ARCE	2	1524.6	1525	1.2				
	1420	CANR	8	1524	1525	2	11.0	4.0		
	1420	BOUL	8	1524	1525	2.5	9.0	4.0		
	23	POTS	8	1524.5	1524.7	.8	2000.0	700.0		
	9400	HUAN	20	1557.5	1603.6	18.9	9.5	5.7		
	15400	SGMR	20	1600	1603.5	10.9	31.5	12.2		
	8800	SGMR	5	1601	1603.6	11.1	7.2	3.6		
	2800	OTTA	26	1645		20	2.0			

SOLAR RADIO EMISSION
OUTSTANDING OCCURRENCES

AUGUST 1972

AUG 1972	FREQUENCY	STATION	TYPE	STARTING TIME UT	TIME OF MAXIMUM UT	DURATION MINUTES	FLUX DENSITY 10^{-22} Wm^{-2} Hz^{-1} PEAK	FLUX DENSITY MEAN	INT	REMARKS
2	9400	HUAN	20	1704.5	1727	30.6	7.6	4.4		
	18	MCMA	42	1707	1729	25			1	
	2800	OTTA	20	1725	1735	25	2.2	1.1		
	245	SGMR	6	1726.2	1736	13.4	150.0	50.0		
	410	SGMR	6	1727.5	1729.2	13.1	8.4	4.0		
	225	HARS	45	1728	1729.5	10	100.0	5.0		
	113	POTS	45	1728.2	1728.3	.3	800.0	200.0		
	18	BOUL	6	1758	1804	7			3	
	18	MCMA	6	1800	1804	5			3	
	9400	HUAN	20	1810.5	1817.7	12.7	11.4	3.0		
	18	BOUL	6	1835	1839	5			3	
	9400	HUAN	45	1836.8	1839.6	61.9	435.2	90.1		
	9400	HUAN		1836.8	1843		160.8			
	9400	HUAN		1836.8	1854.6		160.8			
	9400	HUAN		1836.8	1908.3		153.3			
	9400	HUAN		1836.8	1913.5		85.1			
	15400	SGMR	46	1837.9	1839.6	11.6	490.0	175.0		
	4995	CANR	47	1837	1840	13	836.0	179.0		
	4995	BOUL	45	1837.5	1840	12.5	875.0	242.0		
	2695	SGMR	47	1837.9	1840.3	12.2	580.0	200.0		
	35000	SGMR	47	1838.4	1839.6	10.1	810.0	300.0		
	19000	SLOU	4	1838.6	1840	2 U	475.0			
	10700	PENN	45	1838.1	1839.8	36.5	323.0	81.2		
	9400	SLOU	4	1838.5	1840	3 U	505.0			
	8800	SGMR	47	1838	1839.6	11.5	640.0	250.0		
	4995	SGMR	47	1838.2	1839.6	11.5	990.0	400.0		
	2800	OTTA	4	1838	1840	11	605.0	170.0		
	2700	PENN	47	1838.2	1839.8	6.6	890.0	75.4		
	2695	CANR	47	1838	1840.5	10	597.0	205.0		
	2695	BOUL	45	1838	1841	13	597.0	172.0		
	1420	CANR	3	1838	1840.5	15	159.0	65.0		
	1420	BOUL	3	1838	1841	14.5	144.0	47.0		
	1415	SGMR	4	1838.3	1840.2	10.9	165.0	70.0		
	960	PENN	20	1838.2	1840.8	36.3	32.6	5.2		
	606	SGMR	3	1838.8	1843.4	10.9	16.6	7.0		
	37000	SLOU	4	1839	1840	2	960.0			
	19000	SLOU	30	1840.6	1840.6	8.5	235.0			
	9400	SLOU	30	1840	1840 U		109.0			
	960	PENN	8	1843	1843.1	.1	55.1			
	2700	PENN	29	1844.8	1844.8		34.2			
	15400	SGMR	30	1849.5	1849.5	51.4	59.0	29.0		
	8800	SGMR	30	1849.5	1849.5	61.2	43.3	20.1		
	4995	SGMR	30	1849.7	1849.7	51.2	11.4	5.7		
	2800	OTTA	30	1849		60 D	9.2			
	1415	SGMR	30	1849.2	1849.2	23.3	4.5	2.2		
	2695	SGMR	30	1850.1	1850.1	50.5	9.0	4.5		
	15400	SGMR	3	1853.7	1854.6	2.4	150.0	60.0		
	2695	BOUL	45	1853.5	1855	3	5.0	2.0		
	19000	SLOU	4	1854	1855	1.2	176.0			
	9400	SLOU	4	1854	1855	2	98.0			
	8800	SGMR	3	1854	1854.5	7.9	85.0	34.0		
	4995	SGMR	1	1854.4	1854.7	7.2	4.9	2.4		
	4995	BOUL	8	1854	1854.5	1.5	10.0	3.0		
	2800	OTTA	1	1854.5	1854.7	1	4.4	2.2		
	2695	SGMR	1	1854.3	1854.7	4.3	4.7	2.3		
	1420	BOUL	8	1854.5	1855	1.5	4.0	1.0		
	1415	SGMR	1	1854.5	1854.7	2.5	3.6	1.8		
	606	SGMR	4	1854.3	1854.4	3	18.3	8.2		
	8800	SGMR	4	1905.6	1908.4	10.7	110.0	43.0		
	15400	SGMR	3	1906	1908.4	10.9	250.0	99.0		
	1415	SGMR	1	1906.8	1908.5	5	2.3	1.1		
	9400	SLOU	4	1907.5	1908.5	2.5	134.0			
	4995	BOUL	8	1907.5	1908.5	1.5	14.0	5.0		
	35000	SGMR	3	1908.1	1908.7	2.3	110.0	44.0		
	19000	SLOU	3	1908.5	1909	1	162.0U			
	4995	SGMR	1	1908.1	1908.4	9	7.6	3.8		
	2800	OTTA	1	1908	1908.5	1	7.0	3.5		
	2695	SGMR	1	1908	1908.5	2	7.6	3.8		
	2695	BOUL	8	1908	1909	1.5	7.0	3.0		
	1420	BOUL	8	1908.5	1909	1	4.0	1.0		
	606	SGMR	1	1908.3	1908.5	2.9	5.0	2.5		
	18	BOUL	42	1914	1919	24			1	
	10700	PENN	29	1916.6	1916.6	25.6	22.0	11.0		
	18	MCMA	6	1917	1919	3			1	
	2800	OTTA	20	1920	1925	30	3.4	1.7		
	15400	SGMR	28	1946	2038.5	53	220.0	100.0		
	9500	HIRA	47	1950		312 D	880.0D	400.0D		
	10700	PENN	47	1951.9			3020.0D			
	8800	SGMR	28	1952.5	2034.3	42.8	205.0	100.0		
	4995	SGMR	28	1952.1	2034.2	43.1	250.0	110.0		
	2695	SGMR	28	1952.8	2033	40.5	150.0	75.0		
	18	BOUL	42	1952	2048	58			3	
	9400	HUAN	28	1954.6	2035.9	41.3	201.6	81.6		
	2700	PENN	47	1954.1			1140.0D			
	960	PENN	45	1956.6			203.0D			
	2695	BOUL	47	1957.5	2149	245	6167.0	1032.0		
	4995	BOUL	47	1958	2146.5	225	10265.0	1709.0		
	1415	SGMR	28	1958.2	2031.6	34.5	115.0	50.0		
	410	SGMR	49	1958.8	2141.2	238.2U	190000.0	2900.0		
	410	SGMR	49	1958.8	2141.2	238.2U	190000.0	*2900.0		

SOLAR RADIO EMISSION
OUTSTANDING OCCURRENCES

AUGUST 1972

AUG 1972	FREQUENCY	STATION	TYPE	STARTING TIME UT	TIME OF MAXIMUM UT	DURATION MINUTES	FLUX DENSITY 10^{-22} Wm^{-2} Hz^{-1} PEAK	FLUX DENSITY MEAN	INT	REMARKS
2	2800	OTTA	47	1959	2148	240	9735.0	1580.0		
	606	SGMR	47	1959.4	2141.2	221.1U	80000.0	1800.0		
	606	SGMR	47	1959.9	2141.3	221.1U	80000.01	8000.0		
	18	MCMA	48	2000	2004	5			3	
	245	SGMR	49	2000.3	2141.2	236.7	14800.0	3700.0		
	245	SGMR	49	2000.3	2142.2	236.7U	14800.0	3700.0		
	1420	BOUL	47	2001.5	2123.5	259	6872.0	585.0		
	200	HIRA	48	2012	2039.5	560	1590.0	150.0		
	200	HIRA		2012	2124.2		2100.0			
	200	HIRA		2012	2146		3600.0			
	245	BOUL	49	2016		162			3	
	18	MCMA	42	2020	2038	172			3	
	500	HIRA	45	2025	2108.5	282	4800.0	1600.0		
	500	HIRA		2025	2140		8900.0			
	1415	SGMR	47	2032.7	2121.9		15000.0	.		
	1415	SGMR	47	2032.7	2149	186.3U	7500.0	3800.0		
	1415	SGMR	47	2032.7	2121.9	186.3U	7500.0	3800.0		
	2695	SGMR	47	2033.3	2144	185.7U	9256.0	1700.0		
	2695	SGMR	47	2033.3	2143.8	185.7U	9256.0	1700.0		
	9400	HUAN	45	2035.9	2144.8	20.9	6782.8	2412.0		
	8800	SGMR	47	2035.3	2144.5	157.7U	10720.0	2500.0		
	8800	SGMR	47	2035.3	2144.5	151.7U	10719.0	2500.0		
	4995	SGMR	47	2035.2	2144.5	169.8U	9050.0	2000.0		
	4995	SGMR	47	2035.2	2144.5	169.8U	9047.0	2000.0		
	35000	SGMR	47	2036.5	2145.5	139.5U	950.0	250.0		
	35000	SGMR	47	2036.5	2145.5	139.5U	950.0	250.0		
	15400	SGMR	47	2039	2144.4	140 U	3300.0	850.0		
	15400	SGMR	47	2039	2144.4	140 U	3300.0	850.0		
	18	BOUL	42	2052	2104	110			3	
	208	VORO	44	2100	2113	360	450.0			
	208	VORO	48	2123	2124	2	640.0	400.0		
	9400	TYKW	47	2132 E	2145	110 D	6800.0	1450.0U		
	3750	TYKW	47	2133 E	2148	110 D	7000.0	1850.0U		
	1000	TYKW	47	2133 E	2156.6	100 D	4900.0	1350.0U		
	208	VORO	49	2136.2	2140	26.8	690.0	500.0		
	8800	MANI	29	2145 E		178.1D		1080.0D		PBI
	4995	MANI	29	2145 E		202.3D		762.0		AT
	2695	MANI	29	2145 E		189.6D		513.0D		LOCAL
	1415	MANI	29	2145 E		196.8D		455.0D		SUNRISE
	606	MANI	29	2145 E		214.4D		119.0D		2145UT
	9400	HUAN	29	2156.8	2156.8	37.4	3377.2	1789.3		
	245	BOUL	44	2258		165 D			2	
	9400	TYKW	29	2322		220	35.0	15.0U		
	3750	TYKW	29	2323		220	70.0	30.0U		
	1000	TYKW	29	2323		220	55.0	15.0U		
	500	HIRA	6	2330	2335.6	11	510.0	80.0		
	2695	PENT	29	2359		120 D	28.0			
3	606	MANI	47	0136.5	0204	66.8	2500.0	580.0		
	8800	MANI	20	0140.7	0201.7	55.8	7.1	2.4		
	4995	MANI	20	0140.1	0208.6	56.4	7.7	1.5		
	2695	MANI	20	0140.7	0204.9	57.1	6.1	1.2		
	1415	MANI	46	0142.7	0211.5	60.6	164.0	36.0		
	2000	TYKW	45	0154	0228	60	10.0	4.0		
	1000	TYKW	45	0155	0211.2	100	115.0	40.0		
	500	HIRA	45	0158	0205.2	50	510.0	80.0		
	500	HIRA		0158	0228.8		110.0			
	3750	TYKW	45	0159	0229	50	10.0	3.0		
	200	GORK	44	0300 E		600 D		20.0		
	100	GORK	44	0300 E		600 D		75.0		
	260	ONDR	44	0530	1047	600	35.0			
	410	SGMR	44	0942 E		854 D				
	245	SGMR	44	0942 E		854 D				
	245	BOUL	44	1209 E		813 D			1	
	208	VORO	44	2100	2241.8	240	130.0			
	950	GORK	20	0300 E	0307.1	28.8	9.0	3.0		
	650	GORK	23	0300 E	0307	123	19.0			
	1420	CRON	45	0309	0313.5	28	9.0	3.0		
	950	GORK	3	0326.2	0326.7	7.2	1400.0			
	950	GORK		0326.2	0329.7		1200.0			
	950	GORK		0326.2	0333.1		1000.0			
	100	GORK	41	0330	0331.8	13.1	20000.0			
	100	GORK		0330	0338.3		4500.0			
	100	GORK		0330	0341		20000.0			
	500	HIRA	27	0401.2	0413.7	20	30.0	1.0		
	1415	MANI	20	0402.7	0414.4	36.3	7.2	1.2		
	606	MANI	46	0402.7	0414	39	125.0	19.0		
	1000	TYKW	45	0405	0412.5	17	44.0	18.0		
	950	GORK	45	0406.5E	0411.2	31.4	39.0			
	950	GORK		0406.5E	0430.8		16.0			
	650	GORK	46	0412	0413.8	8.1	70.0			
	650	GORK		0412	0414		77.0			
	650	GORK		0412	0415.5		70.0			
	1000	TYKW	3	0426	0431	12	19.0	8.0		
	650	GORK	20	0515.7	0526.5	13.6	3.5	1.5		
	9750	IRKU	20	0531	0532.2	11	23.0	7.8		
	9100	GORK	1	0531.3	0532.2	3.5	20.0	6.0		
	210	IZMI	41	0706	0707.8	3	100.0			
	9750	IRKU	20	0716	0729.2	20	17.8	9.9		
	210	IZMI	6	1005.2	1005.4	.8	100.0	70.0		

SOLAR RADIO EMISSION
OUTSTANDING OCCURRENCES

AUGUST 1972

AUG 1972	FREQUENCY	STATION	TYPE	STARTING TIME UT	TIME OF MAXIMUM UT	DURATION MINUTES	FLUX DENSITY 10^{-22} Wm^{-2} Hz^{-1} PEAK	FLUX DENSITY MEAN	INT	REMARKS
3	10700	PENN	1	1407.1	1407.2	6.7	8.8	1.4		
	10700	PENN	3	1500	1503.8	6 E	141.0			
	9500	BERL	4	1500.5	1503.6	9	138.0	55.0		
	2700	PENN	3	1500	1503.6	6 E	98.0			
	4995	SGMR	4	1501.9	1503.6	9.8	79.0	30.0		
	4995	CANR	4	1501	1503	5	51.0	24.0		
	4995	BOUL	4	1501	1503.5	5	83.0	37.0		
	2695	CANR	3	1501.5	1503.5	12.5	76.0	31.0		
	2695	SGMR	4	1501.9	1503.5	10.4	65.0	25.0		
	1415	SGMR	4	1501.8	1503.4	10.2	74.0	28.0		
	35000	SGMR	3	1502.2	1503.7	4.8	51.0	25.0		
	15400	SGMR	4	1502.3	1503.7	7.8	100.0	35.0		
	9400	HUAN	45	1502.1	1503.8	4.5	166.8	63.2		
	9400	SLOU	4	1502.5	1504	5	192.0			
	9285	ARCE	4	1502.5	1504	6				
	8800	SGMR	4	1502.1	1503.7	9	185.0	70.0		
	2830	ARCE	4	1502.4	1503.8	7				
	2800	OTTA	4	1502	1503.5	4.5	66.0	23.5		
	2695	BOUL	3	1502.5	1504.5	8	60.0	19.0		
	1500	BERL	4	1502.3	1503.6	8.7	69.0	25.0		
	1420	ARCE	4	1502.3	1503.6	6				
	1420	CANR	45	1502	1504	5	84.0	30.0		
	1420	BOUL	45	1502.5	1504	9.5	77.0	15.0		
	19000	SLOU	4	1503	1503.8	1.5	70.0			
	960	PENN	1	1503.3	1503.9	1.9	1.7	0.8		
	2700	PENN	29	1505.4	1505.4	50.7	9.8	4.9		
	2800	OTTA	29	1506.5		65	4.6	2.3		
	237	TRST	41	1525	1526	1.7	260.0			
	18	MCMA	6	1526	1528	3			2	
	9285	ARCE	22	1540.4	1545.6	26				
	2830	ARCE	2	1544.3	1545.5	2.2				
	15400	SGMR	3	1621.2	1621.4	1.4	16.1	4.0		
	2800	OTTA	20	1633		75	2.2	1.7		
	2800	OTTA	20	1800	1810	55	2.8	1.4		
	18	MCMA	41	1838	1841	4			1	
	2695	CANR	3	1840	1840.5	1.5	5.0	2.0		
	18	BOUL	41	1915	1921	10			3	
	2800	OTTA	24	2010		20	1.2			
	9400	HUAN	3	2017.8	2020.7	11.3	20.6	6.8		
	10700	PENN	3	2018	2019.4	6.6	14.8	4.2		
	18	BOUL	6	2026	2030	9			2	
	9400	HUAN	45	2134.1	2139.4	7.8	78.7	29.0		
	10700	PENN	3	2136.2	2139.6	15	65.5	31.3		
	9400	TYKW	45	2136	2139.3	20	80.0	20.0		
	2800	OTTA	21	2150	2214	245	16.0	4.0		
	4995	BOUL	3	2201.5	2204	10	20.0	6.0		
	2695	BOUL	3	2202	2204.5	7	8.0	2.0		
	9400	TYKW	45	2203	2214	45	48.0	14.0		
	3750	TYKW	45	2203	2214	50	20.0	5.0		
	2700	PENN	20	2203.4	2214.2	56.6	33.4	16.7		
	10700	PENN	3	2205.7	2214.3	37.9	40.3	20.1		
	2000	TYKW	20	2205	2214.1	50	7.0	2.0		
	9400	HUAN	45	2206.4	2214.2	13.6	39.4	18.9		
	960	PENN	45	2217.1	2242.7		15.2			
	1415	MANI	2	2240.9	2243.3	7.4	3.5	1.2		
	606	SGMR	40	2240.9	2247.1	7.6	16.6	4.0		
	606	MANI	2	2240	2247.2	8.3	9.2	1.3		
	410	SGMR	6	2240.8	2247	7.7	195.0	35.0		
	1420	BOUL	45	2241	2243	3	7.0	3.0		
	1415	SGMR	40	2241	2242.9	7.4	6.3	1.5		
	1000	TYKW	8	2241	2241.1	.5	16.0	4.0		
	500	HIRA	6	2241	2241	2.5	170.0	10.0		
	500	HIRA		2241	2242.6		75.0			
	2000	TYKW	1	2242	2242.8	2	2.0	1.0		
	1000	TYKW	1	2242	2242.8	2	8.0	3.0		
	3750	TYKW	1	2246	2247	2	2.0	1.0		
	2695	BOUL	3	2246.5	2247	2	4.0	1.0		
	2000	TYKW	1	2246	2247	2	2.0	1.0		
	1420	BOUL	3	2246.5	2247.5	1.5	5.0	2.0		
	1000	TYKW	1	2246	2247	3	6.0	3.0		
	500	HIRA	6	2246.4	2246.7	2	150.0	20.0		
	1420	BOUL	45	2300.5	2303.5	9	19.0	7.0		
	4995	BOUL	3	2301	2302.5	11.5	16.0	5.0		
	2695	PENT	4	2301	2303	8	18.8	7.8		
	606	MANI	40	2301.3	2302.7	11.7	201.0	13.2		
	9400	TYKW	45	2302	2302.7	3	13.0	4 .0		
	8800	SGMR	4	2302.2	2303.9	5.1	35.1	7.0		
	4995	SGMR	4	2302.1	2303	5.9	30.5	6.0		
	4995	MANI	2	2302.4	2302.7	6.5	7.2	1.4		
	3750	TYKW	45	2302	2302.8	10	18.0	6.0		
	2695	BOUL	3	2302	2303.5	7	12.0	4.0		
	2695	SGMR	4	2302	2302.9	6	22.4	5.0		
	2695	MANI	4	2302.4	2302.8	5.8	12.9	2.6		
	2000	TYKW	45	2302	2303.2	10	16.0	6.0		
	1415	SGMR	4	2302	2302.9	6.5	24.5	5.0		
	1415	MANI	4	2302.4	2302.9	5.8	20.1	2.4		
	1000	TYKW	45	2302	2302.6	6	27.0	6.0		
	606	SGMR	4	2302	2302.6	6.5	205.0	40.0		
	500	HIRA	6	2302.2	2302.5	6	150.0	20.0		
	410	SGMR	48	2302	2303.7	5.6	595.0	95.0		

SOLAR RADIO EMISSION
OUTSTANDING OCCURRENCES

AUGUST 1972

AUG 1972	FREQUENCY STATION	TYPE	STARTING TIME UT	TIME OF MAXIMUM UT	DURATION MINUTES	FLUX DENSITY 10^{-22} Wm^{-2} Hz^{-1} PEAK	FLUX DENSITY 10^{-22} Wm^{-2} Hz^{-1} MEAN	INT	REMARKS
	9400 TYKW	20	2325	2330	18	10.0	3.0		
	3750 TYKW	20	2325	2330	15	2.0	1.0		
	1420 BOUL	8	2329	2330	1	9.0	3.0		
	1420 BOUL	3	2351	2352.5	4	1.0			
4	9400 TYKW	20	0128	0134	20	8.0	4.0		
	3750 TYKW	20	0130	0134	20	2.0	1.0		
	4995 MANI	1	0220.6	0220.8	1.8	2.9	1.4		
	3750 TYKW	1	0220.5	0220.8	1	3.0	1.0		
	2695 MANI	1	0220.6	0220.8	1.9	6.5	1.3		
	2000 TYKW	1	0220.5	0220.8	1	3.0	1.0		
	606 MANI	8	0220.4	0220.8	1.2	43.6	5.9		
	500 HIRA	5	0220.6	0220.8	1	370.0	110.0		
	3750 TYKW	20	0253	0310	50	4.0	2.0		
	200 GORK	44	0300 E		600 D		200.0		
	100 GORK	44	0300 E		600 D		250.0		
	260 ONDR	43	0910		370	85.0D			
	410 SGMR	44	0943 E	1404.7	852 D	39.2			
	245 SGMR	44	0943 E	1930.6	852 D	988.0			
	245 BOUL	44	1206 E		201 D			3	
	208 VORO	44	2100	0014.5	240	50.0			
	9400 TYKW	20	0302	0310	25	6.0	3.0		
	606 MANI	2	0337.5	0338.8	1.8	6.6	1.3		
	9400 TYKW	20	0420	0440	45	2.0	1.0		
	3750 TYKW	20	0425	0440	40	2.0	1.0		
	2950 GORK	21	0434.6		353				
	29 UPIC	45	0438		558				
	606 MANI	8	0440.8	0441.2	.7	112.0	13.2		
	9400 TYKW	28	0505		20	15.0	7.0		
	3750 TYKW	28	0505		20	8.0	4.0		
	8800 MANI	28	0506.2	0527.9	72.6	235.0	73.0		
	4995 MANI	28	0508.6	0527.9	69.8	112.0	54.0		
	2695 MANI	28	0508.1	0528.4	70.8	63.0	20.1		
	3100 CRIM	47	0510	0528	330	66.0	22.0		
	3100 CRIM		0510	0553		27.0	9.0		
	3100 CRIM		0510	0719		300.0	100.0		
	1415 MANI	28	0512.8	0528.7	65.6	13.2	6.0		
	9100 GORK	21	0518.4	0531.1	42.6	46.0	23.0		
	9750 IRKU	3	0520	0527.6	22	305.0	21.0		
	4995 CRON	45	0520.5	0527	37.5	82.0	16.0		
	9500 BERL	46	0524 U	0527.5	18 U	116.0U			
	1500 BERL			0528.5					
	2695 CRON	45	0524.5	0528	37.5	38.0	7.0		
	2000 TYKW	45	0524	0528.2	7	29.0	9.0		
	9400 TYKW	45	0525	0527.8	12	200.0	45.0		
	3750 TYKW	45	0525	0528.5	12	62.0	28.0		
	1420 CRON	45	0525.5	0528	31	11.0	2.0		
	9500 HIRA	45	0527	0527.6	4				
	9100 GORK	4	0527	0527.8	4.1	169.0			
	2950 GORK	4	0527.2	0528.3	8.1	60.0	23.0		
	950 GORK	21	0527.2		452 D				
	2000 TYKW	29	0531		40	6.0	5.0		
	9400 TYKW	29	0537		30	30.0	20.0		
	3750 TYKW	29	0537		30	20.0	19.0		
	1500 BERL	47	0540 U	0624 U	360 D	1400.0D			
	3750 TYKW	1	0547	0552.7	10	6.0	2.0		
	950 GORK	40	0549.7	0551.3	1.9	4.4			
	2695 CRON	47	0604	0636.5	227 D	4500.0	299.0		
	606 MANI	40	0606.6	0616.7	10.9	19.1	3.3		
	9500 BERL	47	0607 U	0630 U	240 D	5300.0D			
	9400 TYKW	28	0607		11.5	34.0	27.0		
	9100 GORK	21	0607.3	0658.9	137.2	280.0			
	4995 CRON	47	0607	0634.5	221.5D	8435.0	1746.0		
	3750 TYKW	28	0607		11.5	30.0	25.0		
	9750 IRKU	46	0608	0628.1	126	16400.0			
	2000 TYKW	28	0611		9	16.0	12.0		
	237 TRST	42	0612	0613	1	130.0			
	23 POTS	45	0612.2	0612.2	.4	1000.0	250.0		
	2950 GORK	47	0617.9	0622.9U	76.5	2500.0D			
	2950 GORK		0617.9	0719.4		880.0			
	1420 CRON	47	0617.5	0634	215.5D	3489.0	191.0		
	9400 TYKW	47	0618.5	0632.2	56.5	10600.0	2900.0		
	9100 GORK	47	0618.9	0626.5	40	16740.0			
	9100 GORK		0618.9	0628.2		16740.0			
	9100 GORK		0618.9	0632.5		17490.0			
	8800 MANI	47	0618.6	0634.3	26.4	36500.02	6600.0		
	4995 MANI	47	0618.4	0635	26.8	19500.01	4100.0		
	3750 TYKW	47	0618.5	0635.5	56.5	7600.0	1900.0		
	2695 MANI	47	0618.4	0635.7	26.3	7500.0	4700.0		
	1415 MANI	47	0618.5	0633.4	28.7	6700.0	2800.0		
	9500 HIRA	47	0619		80				
	9400 SLOU	47	0619	0626.8	120	4400.0			
	19000 SLOU	47	0620	0626.8	70	25000.0			
	2000 TYKW	47	0620	0625.8	54	9450.0	2000.0		
	1000 TYKW	47	0620	0639.5U	32	76000.0D	7900.0U		
	950 GORK	47	0620	0630.3	60	80317.0			
	950 GORK		0620	0640.4		79000.0			
	950 GORK		0620	0706.7		3470.0D			
	950 GORK		0620	0708.5		2950.0			
	950 GORK		0620	0717.1		2790.0			

SOLAR RADIO EMISSION
OUTSTANDING OCCURRENCES

AUGUST 1972

AUG 1972	FREQUENCY	STATION	TYPE	STARTING TIME UT	TIME OF MAXIMUM UT	DURATION MINUTES	FLUX DENSITY 10^{-22} Wm^{-2} Hz^{-1} PEAK	FLUX DENSITY MEAN	INT	REMARKS
4	808	ONDR	45	0620		340				
	650	GORK	47	0620	0641.8	400 D	143400.0			
	650	GORK		0620	0647.6		8000.0			
	650	GORK		0620	1021.8		370.0			
	606	MANI	47	0620	0643.1U	28.2	30000.01	7000.0D		PEAK ALSO
	500	HIRA	48	0620.5	0643.5	190 D	10130.0	1680.0		
	234	POTS	45	0620.5U	0642 U	439.5U	500000.0U	1200.0U		
	37000	SLOU	47	0621.9	0626.7	38	13780.0			
	536	ONDR	45	0621		299	320.0D			
	260	ONDR	45	0621		169	110.0D			
	71000	SLOU	47	0622	0628 U	15 U	11500.0U			
	237	TRST	47	0623.6	0625	140 D	30700.0D			
	237	TRST		0623.6	0643 U		142000.0D			
	237	TRST		0623.6	0749 U		125000.0D			
	237	TRST		0623.6	0823 U		6500.0			
	210	IZMI	49	0623.5	0643	92.5	50000.0D	1620.0		
	210	IZMI		0623.5	0707		50000.0D			
	210	IZMI		0623.5	0734		50000.0U			
	210	IZMI		0623.5	0749		50000.0U			
	225	HARS	45	0624		145	8000.0D			
	200	HIRA	45	0624		186 D	14000.0D	2000.0D		
	113	POTS	45	0624 U	0646 U	492 U	9000.0	900.0		
	100	GORK	41	0624.8	0627.2	8.5	5000.0			
	100	GORK		0624.8	0628.1		10000.0			
	100	GORK		0624.8	0629		8000.0			
	100	GORK		0624.8	0633		30000.0			
	23	POTS	45	0624 U	0632.5U	19 U	90000.0	5000.0		
	200	GORK	49	0625	0707.9	95	100000.0D			
	3100	CRIM	1	0630			320 .0	440.0		
	100	GORK	49	0639	0709.6	81	20000.0			
	8800	MANI	29	0645.2	0645.2	189.8D	4200.0	1600.0D		SUNSET
	4995	MANI	29	0645.2	0645.2	189.8D	3500.0	1460.0D		SUNSET
	2695	MANI	29	0645.2	0645.2	189.8D	2700.0	1070.0D		SUNSET
	1415	MANI	29	0647.1	0647.1	187.9D	1050.0	390.0D		SUNSET
	606	MANI	30	0648.2	0648.2	186.8D	2000.0	880.0D		SUNSET
	1000	TYKW	29	0652		115 D	75.0	70.0U		
	1000	TYKW	47	0652	0716.1	70	4250.0	490.0		
	606	MANI	40	0652.9	0808.7	139.6	12000.0	1750.0		
	2000	TYKW	3	0653	0654.8	12	135.0	50.0		
	4995	CANR	40	0700 E	0719	200 D	403.0	48.0		
	2695	CANR	40	0700 E	0719.5	245.5	490.0	80.0		
	1420	ARCE	40	0700 E	0721.4	210 D				
	1420	ARCE		0700 E	0751.4					
	1420	ARCE		0700 E	0810.1					
	1420	ARCE		0700 E	0819					
	1420	ARCE		0700 E	0839.7					
	1420	ARCE		0700 E	0912.3					
	1420	CANR	40	0700 E	0722	225 D	338.0	55.0		
	9285	ARCE	30	0702.6U		180 D				
	2830	ARCE	30	0702.3U		180 D				
	2830	ARCE	3	0705	0706.7	8				
	2000	TYKW	45	0705	0706.6	9	145.0	65.0		
	9400	TYKW	3	0706	0706.4	3	55.0	20.0		
	9285	ARCE	3	0706.2	0706.9	4.5				
	3750	TYKW	3	0706	0706.5	7	110.0	45.0		
	930	BORD	47	0712 E	0942.2	211 D	1886.0	120.0		
	2000	TYKW	29	0714		126 D	30.0	20.0U		
	9400	TYKW	29	0715		125 D	135.0	40.0U		
	3750	TYKW	29	0715		125 D	65.0	30.0U		
	2000	TYKW	45	0715	0719.3	72	300.0	80.0		
	9400	TYKW	45	0716.5	0718.6	19	290.0	70.0		
	9285	ARCE	4	0716.1	0719.2	19				
	9100	GORK	45	0716.9	0717.5	6.3	93.0			
	3750	TYKW	47	0716.5	0718.6	22	1840.0	130.0		
	2830	ARCE	46	0716.5	0719.4	24				
	2830	ARCE		0721.2	0722	10				
	2830	ARCE		0731.2	0733.1	9.3				
	2830	ARCE		0716.5	0719.4	4.7				
	9100	GORK		0719	0719		200.0			
	9100	GORK		0719	0722		93.0			
	950	GORK	46	0720	0810.1	199	285.0D			
	950	GORK		0720	0840.1		250.0			
	950	GORK		0720	1021.9		287.0			
	3750	TYKW	45	0743	0752.6	20	105.0	45.0		
	9400	TYKW	45	0747	0752.6	15	60.0	20.0		
	2950	GORK	45	0747.4	0752.8	37.8	260.0			
	2950	GORK		0747.4	0809.9		250.0			
	2830	ARCE	46	0747.5	0752.8	16.5				
	2830	ARCE		0747.5	0752.8	9.7				
	2830	ARCE		0757.2	0758.5	6.8				
	9285	ARCE	3	0752.5	0753.1	2.7				
	210	IZMI	24	0755	0823.7	164	4400.0	880.0		
	9285	ARCE	3	0757.5	0758.6	3.4				
	2830	ARCE	46	0804.8	0810	22				
	2830	ARCE		0804.8	0810	8.7				
	2830	ARCE		0813.5	0819.2	13.3				
	1000	TYKW	45	0804	0809.9	22	580.0	105.0		
	9400	TYKW	45	0805	0809.2	20	50.0	20.0		
	9285	ARCE	46	0805	0810.1	24				
	9285	ARCE		0805	0810.1	11.6				

SOLAR RADIO EMISSION
OUTSTANDING OCCURRENCES

AUGUST 1972

AUG 1972	FREQUENCY	STATION	TYPE	STARTING TIME UT	TIME OF MAXIMUM UT	DURATION MINUTES	FLUX DENSITY 10^{-22} Wm^{-2} Hz^{-1} PEAK	FLUX DENSITY 10^{-22} Wm^{-2} Hz^{-1} MEAN	INT	REMARKS
4	9285	ARCE		0816.6	0819.3	12.4				
	3750	TYKW	45	0805	0809.8	21	95.0	30.0		
	1000	TYKW	45	0827	0839.8	20 D	220.0	100.0U		
	2830	ARCE	4	0828.9	0839.9	21.5				
	2000	TYKW	45	0828	0839.3	23	135 .0	40.0		
	3750	TYKW	3	0834	0839.5	13	50.0	20.0		
	9400	TYKW	3	0835	0839.5	10	25.0	10.0		
	9285	ARCE	4	0835.8	0839.9	10.8				
	2000	TYKW	45	0852	0912.7	28 D	190.0	50.0U		
	2830	ARCE	4	0906.4	0912.3	17 U				
	9285	ARCE	4	0908.5	0912.4	14				
	2950	GORK	3	0909.1	0912.2	11.5	300.0			
	9100	GORK	3	0910.1	0912	3.9	44.0	22.0		
	408	TRST	45	0910.3	0912.1	3.4	900.0	300.0		
	2950	GORK	29	0914.2	0915.3	5.2	150.0			
	408	TRST	42	0920	0952.5	190 D	340.0			
	408	TRST		0920	1006.4		360.0			
	408	TRST		0920	1147.8		110.0			
	2695	SGMR		0943 E		104 D				
	1415	SGMR		0943 E	1017.4	149.5D	63.0			
	606	SGMR		0943 E	1021.5	143.2D	336.0			
	550	KIEV	49	1005 E	1021	35	330.0	95 .0		
	1420	CANR	3	1032.5	1037.5	10	4.0	2.0		
	950	GORK	30	1039.1	1039.1	141	10.0			
	650	GORK	30	1041.1	1041.1	139	82.0			
	536	ONDR	45	1046	1057.5	21	70.0			
	1420	CANR	4	1051	1057.5	15	12.0	4.0		
	650	GORK	3	1052.8	1057.7	7.6	34.0	10.6		
	950	GORK	4	1055.6	1057.7	3.8	77.0			
	1420	CANR	45	1113.5	1123	17	44.0	13.0		
	2800	OTTA	20	1117	1120	11	4.2	2.0		
	2695	CANR	3	1117	1119.5	10	5.0	2.0		
	950	GORK	4	1117.1	1120.7	11.5	34.0	13.0		
	536	ONDR	45	1146	1150	13.5	65.0			
	606	SGMR	22	1208.1	1223.5	93.4	23.8	11.0		
	2800	OTTA	23	1210	1318	145	8.0	3.4		
	2695	SGMR	20	1211.7	1223.5	27.1	8.8	4.0		
	1500	BERL	20	1212	1223	43	13.0	4.3		
	1420	CANR	3	1212	1223.5	38.5	14.0	4.0		
	950	GORK	4	1212	1213.4	2	9.0			
	930	BORD	45	1213	1213.7	1	55.0	3.0		
	950	GORK	20	1214.5	1223.7	25	14.0	5.0		
	2800	OTTA	20	1215	1220	18	3.0	1.5		
	1415	SGMR	20	1215	1223.6	22.5	7.4	3.6		
	9500	BERL	20	1217	1315.3	107	15.0	4.4		
	100	GORK	24	1217.5	1223.1U	20.6	50000.0			
	930	BORD	45	1218	1223.2	9	29.0	5.0		
	650	GORK	3	1218	1223.5	14	16.0	6.9		
	536	ONDR	45	1220	1224.5	10	70.0			
	4995	SGMR	20	1254.3	1318.2	57.2	18.2	9.1		
	1415	SGMR	22	1259.8	1310.7	37.9	8.8	4.4		
	8800	SGMR	20	1304	1315	30.9	20.7	10.3		
	1500	BERL	22	1304	1310.7	55	12.0	1.6		
	23	POTS	41	1304.2	1304.5	9.5	28000.0	1500.0		
	930	BORD	41	1304	1315.1	27	41.0	2.0		
	2695	SGMR	20	1306.5	1318.2	40.6	8.8	4.4		
	2700	PENN	40	1308		30				
	1420	CANR	8	1310.5	1311	1.5	15.0	6.0		
	9400	HUAN	20	1311.6	1324.8	29.3	11.3	5.8		
	4995	CANR	3	1311	1314.5	8.5	12.0	4.0		
	536	ONDR	45	1311	1311.5	13.5	95.0			
	606	SGMR	22	1312.8	1316.8	28.8	67.0	28.0		
	960	PENN	41	1314.9	1317.1	4.1	32.3			
	1420	CANR	45	1315	1316	16	7.0	3.0		
	237	TRST	41	1315.2	1316.7	2	1400.0			
	245	SGMR	49	1315.2	1317.5	22.1	790.0	300.0		
	410	SGMR	49	1316.3	1328.8	14.1	1490.0	480.0		
	23	POTS	41	1321.8	1321.9	8.5	10000.0	500.0		
	113	POTS	45	1326.9	1327.1	3	1400.0	50.0		
	9500	BERL	1		1426		5.9			
	1500	BERL	46	1424	1425.7	4	17.0	2.0		
	1420	CANR	8	1424	1426	5	30.0	11.0		
	1415	SGMR	40	1424	1425.7	4.8	8.2	3.2		
	930	BORD	45	1424	1425.2	2	22.0	2.0		
	606	SGMR	40	1424.7	1425	3.1	24.6	9.8		
	410	SGMR	6	1424.1	1424.9	6.6	145.0	58.0		
	1420	BOUL	8	1425	1426	1.5	33.0	9.0		
	536	ONDR	45	1425	1425	2.5	105.0			
	536	ONDR	45	1503	1504	7	220.0			
	4995	CANR	45	1511	1513	7.5	24.0	5.0		
	4995	BOUL	45	1512.5	1514	5.5	32.0	8.0		
	2830	ARCE	23	1512.9	1516.7	11.5				
	18	BOUL	6	1512	1517	6			1	
	550	KIEV	41	1512.7	1513.2	4.5	37.0			
	10700	PENN	20	1513.5	1514.1	96.7	17.6	2.8		
	9500	BERL	46	1513	1514	7	22.0	5.3		
	9285	ARCE	40	1513.4	1514.5	8.5				
	8800	SGMR	46	1513.7	1514.1	7.2	25.9	10.4		
	4995	SGMR	46	1513.5	1514	8.3	36.1	14.2		
	2830	ARCE	3	1513.9	1514.4	1.7				

SOLAR RADIO EMISSION
OUTSTANDING OCCURRENCES

AUGUST 1972

AUG 1972	FREQUENCY	STATION	TYPE	STARTING TIME UT	TIME OF MAXIMUM UT	DURATION MINUTES	FLUX DENSITY 10^{-22} Wm^{-2} Hz^{-1} PEAK	FLUX DENSITY MEAN	INT	REMARKS
4	2800	OTTA	45	1513	1514	5	35.0	12.4		
	2700	PENN	45	1513.2	1514	7.6	55.5	10.2		
	2695	CANR	45	1513	1514	6.5	34.0	10.0		
	2695	SGMR	46	1513.4	1514.1	6.3	34.5	13.9		
	2695	BOUL	45	1513.5	1515	5	23.0	5.0		
	1500	BERL	45	1513	1514	11	12.0	3.1		
	1420	ARCE	40	1513.3	1514.9	5				
	1420	CANR	45	1513	1514.5	7.5	13.0	4.0		
	1420	BOUL	45	1513.5	1514.5	5	12.0	3.0		
	1415	SGMR	46	1513.4	1514.1	4.7	9.5	4.2		
	23	PDTS	45	1513.3	1516.6	3.7	50000.0	8000.0		
	18	MCMA	6	1513	1518	7			3	
	960	PENN	45	1513.2	1517.1	5.2	34.4	5.1		
	930	BORD	45	1513	1516.4	6	108.0	5.0		
	606	SGMR	46	1513.2	1516.4	5.7	200.0	80.0		
	410	SGMR	48	1513.4	1514.1	5.1	940.0	380.0		
	245	SGMR	6	1513.8	1514.1	5.6	84.0	26.0		
	29	UPIC	45	1514	1516	4				
	2800	OTTA	29	1518		20	2.2	1.1		
	2800	OTTA	26	1700		30	2.4			
	18	MCMA	41	1701	1706	5			1	
	18	BOUL	6	1704	1706	3			1	
	9400	HUAN	20	1839.3	1901.7	41.4	13.2	6.9		
	4995	CANR	45	1839	1845.5	8.5	10.0	3.0		
	2800	OTTA	20	1840	1905	50	2.0	1.0		
	2695	CANR	45	1840	1846.5	8	6.0	2.0		
	1420	CANR	45	1840	1842	8	5.0	2.0		
	1420	CANR	45	1854	1856.5	3.5	4.0	1.0		
	4995	CANR	3	1855	1855.5	1.5	6.0	3.0		
	2695	CANR	3	1855	1856	2.5	6.0	2.0		
	18	BOUL	42	1928	1931	19			1	
	9400	HUAN	20	1931.4	1941.4	33.4	18.9	7.3		
	18	MCMA	41	1932	1934	4			1	
	2800	OTTA	20	2020	2040	60	2.0	1.0		
	2800	OTTA	24	2135		25	2.4			
	10700	PENN	20	2204.8	2208.2	16.9	13.7	6.9		
	2800	OTTA	20	2205	2210	20	2.0	1.0		
	9400	TYKW	45	2207	2208	15	12.0	4.0		
	4995	BOUL	21	2207	2207.5	18	7.0	2.0		
	3750	TYKW	45	2207	2208	20	6.0	2.0		
	1420	BOUL	8	2304.5	2305.5	2	24.0	8.0		
	3750	TYKW	20	2320	2321	35	2.0	1.0		
	2695	BOUL	3	2322.5	2325	8.5	9.0	2.0		
	8800	MANI	3	2323.2	2324.8	2.5	52.0	18.9		
	4995	MANI	3	2323.5	2324.8	2.2	22.4	4.8		
	4995	BOUL	8	2323.5	2324.5	2	26.0	10.0		
	4995	CRON	8	2323.5	2324.5	1.5	20.0	4.0		
	2695	CRON	1	2323.5	2324	2	5.0	2.0		
	9400	TYKW	3	2324	2324.8	2	50.0	10.0		
	8800	SGMR	3	2324.5	2325	1	44.4	11.0		
	4995	SGMR	3	2324.2	2324.7	1.3	18.5	4.0		
	3750	TYKW	1	2324	2324.8	3	10.0	3.0		
	2695	SGMR	4	2324.3	2325	1.2	17.4	4.3		
	2695	PENT	1	2324.3	2325	1.7	7.0	3.5		
	2695	MANI	1	2324.4	2324.8	1.2	6.8	1.4		
	2000	TYKW	1	2324	2324.9	5	7.0	2.0		
	1420	CRON	8	2324	2325	1	23.0	10.0		
	1415	SGMR	4	2324.5	2325.1	1.3	23.7	6.0		
	1415	MANI	4	2324.4	2325.1	5.6	23.0	6.1		
	1000	TYKW	1	2324.5	2324.9	1.5	8.0	2.0		
	2695	PENT	30	2326		20	2.4	1.2		
	2695	PENT	8	2329	2329		2.4			
5	4995	CRON	45	0100.5	0102	38	18.0	5.0		
	2800	OTTA	20	0100	0102	55	7.2	3.2		
	2695	CRON	21	0100	0102	35.5	7.0	2.0		
	9400	TYKW	45	0101	0102.2	50	10.0	3.0		
	8800	MANI	4	0101.7	0102.3	2.3	11.8	2.4		
	4995	MANI	4	0101.5	0103.2	3.8	20.8	8.0		
	3750	TYKW	45	0101	0102.2	40	12.0	3.0		
	2695	MANI	2	0101.2	0102.4	3.9	4.1	1.4		
	606	MANI	46	0218.6	0232.8	25.4	65.0	5.4		
	9750	IRKU	41	0223	0226.3	46	31.2			
	9750	IRKU		0223	0232.9		22.6			
	9750	IRKU		0223	0238.4		15.6			
	9750	IRKU		0223	0251.6		13.8			
	9400	TYKW	45	0225	0232.8	15	20.0	6.0		
	8800	MANI	4	0225.8	0232.8	20.4	28.1	5.1		
	1420	CRON	45	0229.5	0233	13.5	35.0	8.0		
	4995	MANI	4	0230.7	0232.9	13.4	33.4	8.4		
	4995	CRON	45	0230	0232.5	12.5	25.0	8.0		
	2695	CRON	45	0230.5	0233	16.5	29.0	7.0		
	2695	MANI	4	0230.7	0233	10.8	38.6	11.0		
	3750	TYKW	45	0231	0232.9	12	26.0	6.0		
	1415	MANI	4	0231.2	0233	10.1	29.5	5.9		
	1000	TYKW	45	0231	0232.8	8	35.0	6.0		
	2000	TYKW	45	0232	0233	10	34.0	7.0		
	500	HIRA	45	0232	0233	7.5	115.0	20.0		
	500	HIRA		0232	0239.3		290.0			
	200	GORK	44	0300 E		600 D		10.0		

SOLAR RADIO EMISSION
OUTSTANDING OCCURRENCES

AUGUST 1972

AUG 1972	FREQUENCY	STATION	TYPE	STARTING TIME UT	TIME OF MAXIMUM UT	DURATION MINUTES	FLUX DENSITY 10^{-22} Wm^{-2} Hz^{-1} PEAK	FLUX DENSITY MEAN	INT	REMARKS
5	100	GORK	44	0300 E		414 D		35.0		
	260	ONDR	44	0545	0916.5	315	45.0			
	410	SGMR	44	0944 E	1403.4	850 D	4.2			
	245	SGMR	44	0944 E	2137.8	850 D	65.0			
	234	POTS	45	1049 U	1123 U	269 U	45.0	11.0		
	210	IZMI	43	1059		61	40.0			
	260	ONDR	43	1100	1223	260	70.0			
	208	VORO	44	2300	2326.5	120	60.0			
	650	GORK	20	0348.5	0352.8	10.2	14.9	5.8		
	950	GORK	3	0350	0352.8	7	15.0	5.0		
	113	POTS	45	0521.5	0523.1	3.4	700.0	70.0		
	23	POTS	45	0521.9	0523	2.4	60000.0	5000.0		
	9750	IRKU	3	0651	0654.3	5	57.0	11.5		
	4995	CRON	45	0652.5	0654	5.5	34.0	11.0		
	9400	SLOU	4	0653	0654.5	3	41.0			
	9100	GORK	3	0653.1	0654.6	4.2	40.0	10.0		
	9400	TYKW	3	0654	0654.1	2	36.0	10.0		
	8800	MANI	3	0654	0654.3	4.3	44.8	4.7		
	4995	MANI	3	0654	0654.3	2.1	33.6	4.8		
	3750	TYKW	3	0654	0654.2	2	10.0	3.0		
	2950	GORK	1	0654.5	0654.9	1.1	7.5	3.6		
	29	UPIC	45	0702	0704.5	2.5				
	29	UPIC	45	0812	0818.5	10				
	210	IZMI	6	0817.1	0817.2	.5	68.0	35.0		
	4995	CANR	3	0911	0912.5	3	5.0	1.0		
	113	POTS	45	1117.6	1118	.8	100.0	10.0		
	23	POTS	45	1117.3	1118.2	1.6	50000.0	5000.0		
	29	UPIC	45	1118	1118.5	1.5				
	808	ONDR	5	1222.5	1222.5	1				
	536	ONDR	5	1222.5	1222.5	1.5	75.0			
	4995	CANR	21	1242.5	1245.5	12.5	8.0	2.0		
	4995	CANR	3	1418.5	1419	4.5	6.0	1.0		
	113	POTS	45	1511.6	1513	2.1	700.0	70.0		
	23	POTS	45	1511.8	1512.9	1.8	1000.0	100.0		
	10700	PENN	3	1650	1650.2	2.2	13.4	3.5		
	2800	OTTA	20	2000	2145	150	2.4	1.2		
	18	BOUL	6	2026	2029	4			1	
	18	MCMA	6	2027	2028	3			1	
	245	BOUL	42	2130	2319	205			1	
6	100	HIRA	6	0006	0007.7	3	140.0	70.0		
	2695	PENT	20	0045	0055	30	2.4	1.2		
	3750	TYKW	20	0050	0056	15	4.0	2.0		
	9400	TYKW	20	0220	0240	80	4.0	2.0		
	3750	TYKW	20	0230	0310	180	4.0	2.0		
	200	GORK	44	0304 E		413 D		40.0		
	100	GORK	44	0304 E		413 D		10.0		
	210	IZMI	44	0700		300	60.0			
	260	ONDR	43	0830	1155	460	50.0			
	410	SGMR	44	0945 E	1134	848 D	11.0			
	245	SGMR	44	0945 E	1130.6	848 D	160.0			
	245	BOUL	43	1203 E		302 D			1	
	208	VORO	44	2100	2219.6	240	96.0			
	950	GORK	1	0346.2	0346.4	.4	3.5	1.7		
	650	GORK	1	0346	0347.3	2.6	3.7	1.3		
	8800	MANI	20	0416.5	0419.5	15.3	15.3	5.1		
	4995	MANI	20	0416.1	0419.7	16.7	12.4	4.7		
	2695	MANI	20	0416.2	0420.2	21.7	10.4	3.0		
	9750	IRKU	1	0418	0419	6	22.0	10.8		
	9100	GORK	1	0418.6	0419.3	5.4	13.0	6.5		
	2950	GORK	1	0418.8	0418.9	4.5	5.0	3.0		
	100	GORK	6	0529.1	0530.2	2.6	160.0	80.0		
	9500	BERL	3	0534	0535.9	4	12.0	3.7		
	9750	IRKU	1	0535	0535.8	2	12.2	5.2		
	9100	GORK	1	0535.3	0536	1.8	13.0	6.5		
	260	ONDR	41	0620	0738	130	30.0			
	100	GORK	41	0645.7	0646.2	7.8	200.0			
	100	GORK		0645.7	0652.6		200.0			
	100	HIRA	6	0645.4	0646	2.5	50.0	30.0		
	100	HIRA	6	0648.1	0648.8	2	35.0	15.0		
	100	HIRA	6	0650.2	0652	2.5	40.0	20.0		
	606	MANI	2	0702.4	0703	1.7	5.4	1.6		
	100	GORK	48	0917.2	0923.6U	10	200.0D			
	100	GORK		0917.2	0926		200.0D			
	113	POTS	45	0920.7	0922.5	5	1000.0	160.0		
	100	HIRA	6	0920	0922.5U	6	90.0U	40.0U		
	23	POTS	45	0920.7	0922.2	5.2	11000.0	750.0		
	2695	CANR	3	0921	0922.5	2	4.0	2.0		
	29	UPIC	45	0921	0922.5	5.5				
	650	GORK	1	0921.1	0921.5	.6	5.2	2.3		
	2830	ARCE	2	0922.4	0922.7	1.2				
	650	GORK	4	0922.3	0922.7	1.1	24.0	9.1		
	536	ONDR	5	0926	0926	1.5	85.0			
	29	UPIC	45	1006	1011	8				
	29	UPIC	45	1030	1033	4				
	2695	CANR	3	1132.5	1133	2.5	4.0	1.0		
	1420	CANR	3	1133	1134	2	2.0	1.0		
	536	ONDR	45	1156	1156.5	2	65.0			
	234	POTS	41	1156.3	1157.1	.8	200.0	5.0		
	9285	ARCE	1	1157.4	1157.8	.7				

SOLAR RADIO EMISSION
OUTSTANDING OCCURRENCES

AUGUST 1972

AUG 1972	FREQUENCY STATION	TYPE	STARTING TIME UT	TIME OF MAXIMUM UT	DURATION MINUTES	FLUX DENSITY 10^{-22} Wm^{-2} Hz^{-1} PEAK	FLUX DENSITY 10^{-22} Wm^{-2} Hz^{-1} MEAN	INT	REMARKS
	1420 ARCE	1	1157.5	1157.9	.9				
	1420 CANR	8	1157.5	1158	1	4.0	2.0		
	29 UPIC	45	1225	1225.5	2				
	2695 CANR	3	1242.5	1243.5	1.5	2.0	1.0		
	1420 CANR	8	1243	1244	1.5	6.0	3.0		
	536 ONDR	45	1243	1243	1.5	80.0			
	536 ONDR	45	1250	1250.5	2	50.0			
	10700 PENN	41	1352.6	1354.7	3.4	18.0			
	15400 SGMR	3	1526.1	1526.4	4.7	52.0	10.0		
	10700 PENN	1	1526.2	1526.4	4.1	8.8	1.4		
	10700 PENN	20	1534.1	1540	17	8.8	3.5		
	2695 BOUL	45	1612.5	1614.5	3	40.0	10.0		
	2695 CANR	45	1612	1614.5	13	63.0	14.0		
	2800 OTTA	4	1613	1613.7	2	25.0	12.0		PEAK=90
	2700 PENN	45	1613.1	1613.5	3	153.0	11.6		
	2695 SGMR	4	1613	1613.4	2.2	54.0	14.0		
	2800 OTTA	29	1615		13	1.8	0.9		
	10700 PENN	1	1626.7	1630.7	8.9	9.2	2.8		
	9400 HUAN	20	1646.9	1651.9	24.8	14.9	6.0		
	10700 PENN	3	1647.3	1656	16.1	18.7	9.2		
	8800 SGMR	20	1647.9	1652	24.2	15.0	7.4		
	4995 SGMR	20	1650	1658.5	16.1	2.1	1.1		
	2800 OTTA	1	1757	1759	7	1.4	0.7		
	9400 HUAN	20	1801.3	1804.1	17.3	7.5	2.6		
	15400 SGMR	3	1840.2	1840.9	4.5	20.0	5.0		
	10700 PENN	3	2139.9	2144.2	20.7	21.6	9.5		
	9400 HUAN	20	2140.2	2146.8	14.7	18.7	8.7		
	9400 TYKW	1	2234	2235.2	3	9.0	3.0		
	15400 SGMR	3	2300.5	2300.6	1.2	78.0	20.0		
	9400 TYKW	3	2336	2342.2	25	20.0	6.0		
7	9100 GORK	21	0236 E	0403	141	105.0	60.0		
	9500 HIRA	45	0250.8	0252	2.5				
	9750 IRKU		0251	0252		343.0			
	9750 IRKU	45	0251	0252.4	13	610.0			
	9400 TYKW	45	0251	0252.4	9	430.0D	60.0		
	8800 MANI	4	0251.4	0252.4	10.6	377.0	51.0		
	4995 MANI	4	0251.4	0252.4	15.2	83.0	8.2		
	4995 CRON	4	0251	0252	16	68.0	22.0		
	3750 TYKW	45	0251	0252.1	2	66.0	20.0		
	2695 MANI	40	0251.4	0253.2	2.8	40.0	7.2		
	2695 CRON	45	0251	0252.5	2.5	28.0	11.0		
	9100 GORK	45	0254.6	0254.9	2	210.0D			
	9100 GORK		0254.6	0255.5		210.0D			
	100 GORK	44	0300 E		198		5.0		
	200 GORK	44	0309 E		540		10.0		
	260 ONDR	44	0530	0917.5	573.5	75.0			
	410 SGMR	44	0947 E		346 U				
	245 SGMR	44	0947 E		346 U				
	200 GORK	44	1200 E		60 D		25.0		
	100 GORK	44	1203		57 D		150.0		
	9750 IRKU		0345	0347		218.0			
	9750 IRKU		0345	0354.3	53	135 .0			
	9400 TYKW	45	0345	0354.2	100	195.0	40.0		
	8800 MANI	46	0345.8	0354.4	24.9	191.0	25.5		
	4995 MANI	4	0345.8	0354.4	31.9	78.0	34.2		
	4995 CRON	45	0345.5	0358	67.5	54.0	20.0		
	2000 TYKW	20	0345	0354.6	90	19.0	5.0		
	9100 GORK	45	0346	0347.1	16.4	130.0			
	9100 GORK		0346	0354.4		105.0			
	3750 TYKW	45	0346	0355	90	49.0	20.0		
	2695 CRON	45	0346	0354.5	84.5	271.0	11.0		
	2695 MANI	40	0347.8	0354.8	17.6	440.0	14.3		
	1420 CRON	21	0353.5	0355	35.5	3.0	1.0		
	9500 BERL	46	0400 E	0401.7	50 D	140.0U			
	1500 BERL	46	0400 E	0401.7	40 D	10.0U			
	225 HARS	45	0626.5	0727.5	2	110.0	35.0		
	3750 TYKW	1	0636	0638	10	2.0	1.0		
	3100 CRIM	1	0731	0740	15	3.0	1.0		
	29 UPIC	45	0835	0836	3				
	100 GORK	6	0836	0836.2	.7	200.0	40.0		
	1420 CANR	3	0923	0927	7	3.0	1.0		
	2830 ARCE	29	1001.6		32.5				
	9285 ARCE	1	1016.8	1017.2	1				
	2830 ARCE	1	1016.9	1017.1	.8				
	2695 CANR	3	1016.5	1017	2.5	4.0	1.0		
	1500 BERL	1	1016.8E	1016.8		2.2			
	1420 CANR	8	1017	1017.5	1.5	4.0	1.0		
	408 TRST	45	1016.7	1016.8	.3	170.0D			
	2695 CANR	3	1022.5	1023.5	1.5	4.0	1.0		
	4995 CANR	21	1049.5	1056	36.5	24.0	5.0		
	3100 CRIM	3	1051	1057	70	57.0	18.0		
	9500 BERL	4	1054	1056.5	56	90.0	15.0		
	9285 ARCE	46	1054.6	1057.1	7.8				
	9285 ARCE		1054.6	1057.1	4				
	9285 ARCE		1058.6	1059.3	3.8				
	9100 GORK	4	1054.5	1056.8	5.1	94.0	44.0		
	8800 SGMR	4	1054.6	1056.8	10.5	88.0	22.0		
	4995 SGMR	22	1054.5	1056.7	20	31.0	16.0		
	2830 ARCE	46	1054.6	1057.2	7				

SOLAR RADIO EMISSION
OUTSTANDING OCCURRENCES

AUGUST 1972

AUG 1972	FREQUENCY	STATION	TYPE	STARTING TIME UT	TIME OF MAXIMUM UT	DURATION MINUTES	FLUX DENSITY 10^{-22} Wm^{-2} Hz^{-1} PEAK	FLUX DENSITY 10^{-22} Wm^{-2} Hz^{-1} MEAN	INT	REMARKS
7	2830	ARCE		1054.6	1057.2	4				
	2830	ARCE		1058.6	1058.9	3				
	1415	SGMR	1	1054.5	1057.3	5.5	5.5	1.4		
	606	SGMR	4	1054.6	1056	3.4	40.0	10.0		
	15400	SGMR	4	1055.4	1056.7	6.2	85.0	21.0		
	9400	SLOU	46	1055	1057.5	27	128.0			
	2950	GORK	46	1055.5	1057.3	52	160.0			
	2950	GORK		1055.5	1058.9		58.0			
	2800	OTTA	46	1055	1057	6.5	67.0	34.0		PEAK=140
	2695	CANR	40	1055	1057.5	7.5	131.0	32.0		
	2695	SGMR	4	1055.4	1057	7.7	120.0	30.0		
	1500	BERL	1	1055.7	1056.7	27	4.3	1.1		
	1420	CANR	3	1055.5	1057.5	6.5	5.0	2.0		
	950	GORK	2	1055.9	1056.8	3.5	3.9	1.1		
	650	GORK	4	1055.5	1056.8	2	6.2	4.1		
	19000	SLOU	4	1056.6	1057	2	51.0			
	1420	ARCE	20	1056.4	1057	6				
	536	ONDR	45	1056	1057	2.5	140.0			
	9100	GORK	29	1059.6	1059.6	27.7	38.0	13.0		
	2800	OTTA	29	1101.5		55	11.0	5.5		
	9285	ARCE	29	1102.4		37				
	100	GORK	41	1102.7	1103.2	5.1	350.0			
	100	GORK		1102.7	1104		250.0			
	2950	GORK	29	1103 U	1103 U	44.7	26.0	13.0		
	210	IZMI	41	1103	1149.2	57	150.0			
	4995	CANR	45	1159.5	1202.5	3.5	49.0	18.0		
	15400	SGMR	4	1200.6	1201.8	6.1	300.0	75.0		
	10700	PENN	3	1200	1203.2	20 D	42.0D			
	9500	BERL	4	1200	1201.6	45	242.0	45.0		
	9400	HUAN	45	1200.6	1201.8	3.6	273.6	99.1		
	9400	SLOU	4	1200.6	1202.6	8	378.0			
	8800	SGMR	4	1200.5	1201.9	6	280.0	70.0		
	4995	SGMR	46	1200.7	1201.9	3	80.0	20.0		
	2800	OTTA	21	1200	1335	150 D	15.8			
	2695	CANR	3	1200.5	1201.5	2	12.0	4.0		
	2695	SGMR	4	1200.6	1201.3	2.4	11.0	2.9		
	19000	SLOU	4	1201.3	1201.9	2.4	228.0			
	9285	ARCE	4	1201	1202.2	3.2				
	9100	GORK	3	1201 E	1201.6	1.7	360.0			
	2830	ARCE	4	1201.1	1201.5	1.8				
	2800	OTTA	40	1201	1201.3	2	18.0			
	9100	GORK	29	1202.7	1202.7	8.7	65.0	27.0		
	4995	SGMR	29	1203.7	1203.7	28.2	7.8	2.0		
	9285	ARCE	29	1204.2		32.5				
	9400	HUAN	29	1205.2	1205.8	12.6	30.0	11.6		
	8800	SGMR	29	1206.5	1206.5	23.5	29.0	7.1		
	2695	CANR	3	1211.5	1212.5	1.5	4.0	1.0		
	245	BOUL	42	1213	1249	178			2	
	113	POTS	45	1226.6	1226.8	1.2	800.0	150.0		
	930	BORD	45	1259	1259.3	1	20.0	2.0		
	9500	BERL	47	1300	1525 U	180 D	5300.0D	45.0		
	3100	CRIM	3	1301	1302	2	16.0	5.0		
	9285	ARCE	20	1303.5	1304.5	6				
	2830	ARCE	1	1304	1304.2	.5				
	2695	CANR	3	1316	1316.5	1.5	3.0	1.0		
	2695	BOUL	3	1318.5	1319	1	4.0	1.0		
	2800	OTTA	40	1320.5	1320.7	2.5	4.6			
	2695	CANR	3	1320.5	1321	2.5	6.0	2.0		
	1500	BERL	47	1320	1524.5	180 D	1400.0D			
	2695	BOUL	3	1416.5	1417	2.5	5.0	2.0		
	4995	BOUL	45	1417	1417.5	5.5	14.0	6.0		
	4995	SGMR	47	1422	1526.6	51.7	8400.0	2100.0		
	234	POTS	45	1425 U	1522 U	140 U	800.0	120.0		
	2695	BOUL	3	1426	1427	4	3.0	1.0		
	2800	OTTA	28	1430		35	16.6	8.3		
	8800	SGMR	47	1434	1521.9	51.4	27000.0	8900.0		
	960	PENN	47	1434.9		125	1150.0D			
	2695	SGMR	47	1435.5	1526.8	63.5	3900.0	980.0		
	2695	SGMR	47	1435.5	1526.8	63.5	3907.0	980.0		
	9285	ARCE	28	1436.5		32.5				
	2830	ARCE	28	1436.2		34				
	2700	PENN	47	1436.1		129	4520.0D			
	245	SGMR	49	1436	1522.4	58.5	1400.0	340.0		
	245	SGMR	49	1436	1522.4	58.5	1374.0	340.0		
	113	POTS	45	1438 U	1520.5U	136 U	20000.0	400.0		
	15400	SGMR	47	1443	1522.6	28.6	18600.0	4600.0		
	1420	ARCE	28	1443		27.2				
	8800	SGMR	47	1447.6	1521.9	51.4	27056.0	8900.0		
	4995	SGMR	47	1447.8	1526.6	51.7	8361.0	2100.0		
	606	SGMR	47	1451.9	1521.8	38.1	6900.0	1700.0		
	606	SGMR	47	1451.9	1521.8	38.1	6949.0	1700.0		
	410	SGMR	49	1451.5	1521.6	39.8	9500.0	1100.0		
	410	SGMR	49	1451.5	1521.6	39.8	9500.0	1800.0		
	930	BORD	47	1453	1523	83 D	4270.0D	230.0		
	4995	CANR	47	1457	1527	146.5	8600.0	1426.0		
	4995	BOUL	47	1457	1527 U	146.7	13068.0	2568.0		
	2695	BOUL	47	1457	1529	126	3481.0	517.0		
	2695	CANR	47	1457.5	1529	80	3594.0	758.0		
	1420	BOUL	47	1457	1516.5	221.5	2176.0	238.0		
	1415	SGMR	47	1458.2	1516	31.8	4200.0	1000.0		

SOLAR RADIO EMISSION
OUTSTANDING OCCURRENCES

AUGUST 1972

AUG 1972	FREQUENCY	STATION	TYPE	STARTING TIME UT	TIME OF MAXIMUM UT	DURATION MINUTES	FLUX DENSITY 10^{-22} Wm^{-2} Hz^{-1} PEAK	FLUX DENSITY 10^{-22} Wm^{-2} Hz^{-1} MEAN	INT	REMARKS
7	1415	SGMR	47	1458.2	1516	31.8	4162.0	1000.0		
	10700	PENN	47	1459.2		67.1	7330.0D			
	225	HARS	45	1500	1525	55	600.0	230.0		
	1420	CANR	47	1502	1516.5	95	2375.0	414.0		
	9400	HUAN	47	1505.6	1526.8	30.9	15123.2	3726.8		
	2800	OTTA	47	1505	1528	65	4500.0	1092.0		
	35000	SGMR	47	1507.9	1521.8	26	14700.0	4800.0		
	35000	SGMR	47	1507.9	1521.8	26	14700.0	4800.0		
	15400	SGMR	47	1507	1522.6	28.6	18555.0	4600.0		
	9400	SLOU	47	1507	1522.5	100	14100.0			
	19000	SLOU	47	1508	1522.2	87	27200.0			
	9285	ARCE	47	1509		30				
	37000	SLOU	47	1510.9	1522.3	29	11100.0			
	2830	ARCE	47	1510.2		30.6U				
	1420	ARCE	47	1510.2		31.4				
	1420	ARCE		1510.2	1511.6	3				
	1420	ARCE		1513.2		28.4				
	237	TRST	47	1510 U	1515.5	140 D	8500.0D			
	237	TRST		1510	1522.4		3100.0			
	237	TRST		1510	1526.3		3900.0			
	260	ONDR	45	1510		110	50.0D			
	536	ONDR	45	1511		69	390.0D			
	245	BOUL	48	1511	1515	66			3	
	29	UPIC	45	1514		62				
	18	MCMA	41	1518	1524	8			1	
	23	POTS	45	1522 E	1522 U		10000.0U			
	18	MCMA	48	1528	1535	13			3	
	1415	SGMR	29	1530	1530	188.9	1366.0	160.0		
	606	SGMR	29	1530	1530	186	437.0	95.0		
	410	SGMR	6	1531.3	1531.3	184	220.0	40.0		
	35000	SGMR	29	1533.9	1533.9	193.4	1450.0	340.0		
	245	SGMR	6	1534.5	1534.5	177.8	92.0	21.0		
	15400	SGMR	29	1535.6	1535.6	191.5	1000.0	250.0		
	9400	HUAN	29	1536.5	1536.5	111.5	787.1	210.7		
	9285	ARCE	29	1539		98				
	8800	SGMR	29	1539	1539	191 U	720.0	110.0		
	4995	SGMR	29	1539.5	1539.5	190.5U	275.0	46.0		
	2695	SGMR	29	1539	1539	191 U	328.0	60.0		
	2830	ARCE	30	1540.8U		84				
	1420	ARCE	30	1541.6		90 D				
	2830	ARCE	46	1541.7	1547.3	27				
	2830	ARCE		1541.7	1547.3	9.7				
	2830	ARCE		1551.4	1553.4	6.8				
	2830	ARCE		1558.2	1559.8	10.5				
	1420	ARCE	45	1542.3	1547.9	27				
	1420	ARCE		1542.3	1547.9	9.2				
	1420	ARCE		1551.5	1553.6	6.7				
	1420	ARCE		1558.2	1600.3	11.1				
	18	MCMA	42	1602	1623	49			1	
	10700	PENN	29	1606.3	1606.3	205	95.3	47.6		
	2800	OTTA	30	1610		210	50.0	17.0		
	18	BOUL	6	1624	1627	5			2	
	2800	OTTA	1	1633	1634	3	5.0	2.5		
	2695	CANR	3	1633	1634.5	3	12.0	4.0		
	2800	OTTA	1	1641.5	1642	1.5	6.2	3.1		
	2695	CANR	8	1641.5	1642.5	1.5	9.0	4.0		
	1420	CANR	3	1641.5	1642.5	3	8.0	3.0		
	2700	PENN	29	1645.1	1645.1	48.5	21.2	10.6		
	2700	PENN	3	1645.3	1650.7	10.1	42.4	15.7		
	2830	ARCE	3	1646.7	1650.4	8.3				
	2695	CANR	3	1646.5	1651.5	7.5	36.0	13.0		
	1420	ARCE	3	1646.9	1651.6	8.8				
	1420	CANR	45	1646.5	1651	8.5	41.0	17.0		
	960	PENN	3	1646.5	1650.7	8.3	38.2	21.7		
	2800	OTTA	3	1647	1650.7	9	25.8	11.2		
	1420	CANR	45	1715.5	1720	13	14.0	5.0		
	2800	OTTA	45	1716	1719.2	12	9.2	4.6		
	2695	BOUL	45	1716.5	1719.5	11.5	9.0	3.0		
	2695	CANR	45	1718.5	1719.5	9	12.0	4.0		
	2800	OTTA	1	1736	1738	5	4.2	2.1		
	1420	CANR	45	1736	1739	11.5	15.0	5.0		
	2695	CANR	3	1737.5	1739	3.5	9.0	3.0		
	2695	BOUL	3	1737.5	1738.5	3.5	5.0	2.0		
	2800	OTTA	1	1750.5	1757.3	5	5.4	2.7		
	2695	BOUL	3	1756	1758	5	7.0	3.0		
	1420	CANR	3	1756	1758	7	9.0	3.0		
	1420	CANR	3	1818.5	1819.5	2	5.0	2.0		
	1420	BOUL	45	1852.5	1856	9	3.0	1.0		
	9400	HUAN	20	1928.2	1943.8	33.6	7.5	2.1		
	2800	OTTA	26	1940		230	10.0			
	2695	SGMR	1	1944.9	1948.5	6.7	3.9	1.9		
	1420	BOUL	45	1944.5	1949	13.5	7.0	2.0		
	1415	SGMR	20	1944.8	1948.5	12.4	8.2	4.1		
	606	SGMR	22	1944.9	1948.8	11.6	39.5	16.2		
	2800	OTTA	1	1945	1948.5	6	2.8	1.4		
	2695	BOUL	3	1947	1949	3.5	5.0	2.0		
	2800	OTTA	1	1952	1954	3	1.2	0.6		
	2695	BOUL	3	1953.5	1954.5	3	4.0	1.0		
	1420	BOUL	21	2003	2007	20.5	7.0	2.0		
	245	SGMR	6	2007	2010.4	18.8	7.2	3.5		

SOLAR RADIO EMISSION
OUTSTANDING OCCURRENCES

AUGUST 1972

AUG 1972	FREQUENCY	STATION	TYPE	STARTING TIME UT	TIME OF MAXIMUM UT	DURATION MINUTES	FLUX DENSITY 10^{-22} Wm^{-2} Hz^{-1} PEAK	FLUX DENSITY MEAN	INT	REMARKS
	2800	OTTA	1	2008	2012	6	2.4	1.2		
	2695	SGMR	20	2008.9	2011.7	11.6	3.9	1.8		
	1415	SGMR	20	2008	2011.5	17.9	6.8	3.0		
	606	SGMR	20	2008.3	2021.9	14.9	10.9	4.6		
	410	SGMR	6	2008.9	2014.9	17.3	9.6	4.7		
	2695	BOUL	3	2010	2011.5	4	3.0	1.0		
	245	SGMR	6	2039.8	2046	31	10.4	5.2		
	606	SGMR	20	2040.3	2104.1	31.5	4.2	2.1		
	410	SGMR	6	2040.2	2046.3	30.8	13.8	7.9		
	1420	BOUL	3	2047	2051.5	7	3.0	1.0		
	2695	BOUL	3	2050	2050.5	3.5	3.0	1.0		
	1415	SGMR	22	2059.8	2101.5	11.8	9.5	4.2		
	1420	BOUL	45	2100	2108	12.5	4.0	1.0		
	1420	BOUL	21	2135.5	2140.5	17	3.0	1.0		
8	100	HIRA	6	0150.2	0150.9	1.5	60.0	20.0		
	9750	IRKU	1	0629	0629.8	5	13.5	6.7		
	9500	BERL	22	0636	0729.7	74	14.0	3.0		
	200	GORK	6	0644	0644.5	.6	30.0	15.0		
	100	GORK	6	0648	0648.3	.8	350.0	150.0		
	536	ONDR	5	0842	0842	.5	55.0			
	4995	CANR	3	1104.5	1105.5	2.5	4.0	2.0		
	4995	CANR	45	1129	1129.5	2.5	18.0	8.0		
	15400	SGMR	3	1130.6	1130.8	2.6	14.0	3.6		
	8800	SGMR	1	1130.8	1131	4.8	8.4	2.1		
	4995	SGMR	3	1130.7	1130.9	2.8	17.0	4.2		
	245	SGMR	43	1212	1241.2	262.5	17.9	7.0		
	237	TRST	45	1240	1240.3	.6	65.0	21.0		
	100	GORK	6	1240.2	1240.5	.5	100.0	50.0		
	9400	HUAN	20	1255.2	1338.7	71.7	9.4	3.7		
	9285	ARCE	1	1300.4	1300.8	4.6				
	2830	ARCE	1	1300.3	1300.7	1				
	2695	CANR	3	1300	1300.5	1.5	3.0	1.0		
	536	ONDR	5	1447	1447	1.5	50.0			
	9400	HUAN	20	1524.1	1542	29	9.4	2.5		
	10700	PENN	3	1541.3	1541.8	1.6	11.6	4.6		
	4995	BOUL	3	2028	2029	3.5	11.0	4.0		
	10700	PENN	20	2123	2206	66.5	21.7	11.2		
	9400	HUAN	3	2123.1	2129.4	14.6	24.4	12.6		
	2800	OTTA	21	2123	2200	135	4.8	2.4		
	2700	PENN	20	2124.8	2129.8	77.8	13.7	6.9		
	2800	OTTA	1	2127.5	2129	6.5	4.6	2.3		
	2695	BOUL	8	2144	2144.5	1	5.0	2.0		
	4995	BOUL	8	2145	2145	1	15.0	7.0		
	9400	TYKW	3	2204	2205.9	8	15.0	3.0		
	10700	PENN	1	2234.4	2234.5	.2	9.5	8.8		
9	2695	PENT	20		0005	60	3.6	1.8		
	9750	IRKU	1	0114.3	0114.5	3	11.0	5.6		
	8800	MANI	3	0127.7	0128.4	2	16.0	6.0		
	4995	MANI	1	0127.7	0128.3	1.9	4.5	1.5		
	9750	IRKU	1	0128	0128.4	1	16.0	5.0		
	9400	TYKW	3	0128	0128.3	2	16.0	4.0		
	9750	IRKU	1	0135	0136.6	4	11.0			
	9400	TYKW	1	0136	0136.8	4	8.0	3.0		
	100	HIRA	6	0238.4	0238.5	1	90.0	30.0		
	200	HIRA	27	0308	0440	218	35.0	10.0		
	2950	GORK	4	0520	0523	3.8	192.0	78.0		
	260	ONDR	41	0520	0617.5	610	50.0			
	2950	GORK	3	0523.4	0523.4	.2	15.0	7.0		
	536	ONDR	45	0551.5	0552.5	3	55.0			
	536	ONDR	5	0617	0617	1.5	50.0			
	536	ONDR	5	0645	0645	1.5	45.0			
	2695	CANR	3	0745.5	0746	2	4.0	1.0		
	9500	BERL	20	0806.2	0831	39	14.0	6.0		
	1420	CANR	45	0807.5	0809	2.5	3.0	1.0		
	113	POTS	45	0811 U	0859 U	349 U	150.0	13.0		
	200	GORK	44	0812		288		5.0		
	100	HIRA	27	0812	0859	83 D	100.0	30.0		
	100	GORK	24	0815	0900 U	93	300.0			
	536	ONDR	45	0854	0855	6	55.0			
	100	GORK	44	0948		192 D		10.0		
	408	TRST	42	1015.3	1025	10.3	140.0D			
	1420	CANR	8	1024	1025	1.5	3.0	1.0		
	221	ABST	1	1024.5	1024.8	.7	47.0			
	536	ONDR	5	1025	1025	1.5	55.0			
	408	TRST	41	1124.4	1125.9	1.8	66.0			
	4995	BOUL	3	1336	1337.5	4.5	13.0	3.0		
	2800	OTTA	20	1430	1455	80	2.4	1.2		
	2695	BOUL	3	1454	1455.5	5	3.0	1.0		
	4995	CANR	3	1611.5	1613.5	4	12.0	4.0		
	2830	ARCE	20	1612 U	1614.6	4.6U				
	15400	SGMR	3	1613.9	1614.1	2.6	15.0	4.0		
	10700	PENN	3	1613.4	1614.5	4	23.6	4.6		
	9500	BERL	4	1613.5	1614.4	3.1	23.0	6.0		
	9400	HUAN	3	1613.6	1614.6	2	28.4	12.6		
	8800	SGMR	3	1613.9	1614.6	2.6	23.6	6.0		
	4995	SGMR	3	1613.9	1614.6	1.9	12.0	3.0		
	4995	BOUL	3	1613.5	1614.5	2.5	13.0	3.0		
	9400	SLOU	3	1614	1615	2	29.0			

SOLAR RADIO EMISSION
OUTSTANDING OCCURRENCES

AUGUST 1972

AUG 1972	FREQUENCY	STATION	TYPE	STARTING TIME UT	TIME OF MAXIMUM UT	DURATION MINUTES	FLUX DENSITY 10^{-22} Wm^{-2} Hz^{-1} PEAK	FLUX DENSITY 10^{-22} Wm^{-2} Hz^{-1} MEAN	INT	REMARKS
	9285	ARCE	4	1614.1	1614.8	3.6				
	930	BORD	45	1657	1659.7	3	37.0	3.0		
	15400	SGMR	3	1715.2	1715.5	4.6	16.8	4.0		
	10700	PENN	1	1715.4	1715.8	2.4	9.2	2.1		
	8800	SGMR	3	1715.2	1715.9	4.8	11.1	2.5		
	245	SGMR	43	1805	1849.2	343 D	19.3			
	10700	PENN	3	1916.8	1918	8.6	33.1	6.3		
	9400	HUAN	3	1916.5	1917.7	8.9	28.4	7.2		
	15400	SGMR	3	1917.3	1918	10	22.4	5.0		
	8800	SGMR	3	1917.3	1918	9.5	28.9	7.0		
	4995	SGMR	1	1917.6	1917.8	8.5	3.1	1.0		
	2800	OTTA	1	1917	1917.5	1	1.0	0.5		
	2695	BOUL	3	1917	1917.5	1.5	4.0	1.0		
	1415	SGMR	3	1932.7	1932.8	.6	11.6	3.0		
	606	SGMR	3	1932.7	1932.9	.7	22.1	5.0		
	410	SGMR	6	1932.8	1932.9	.4	7.7	2.0		
	15400	SGMR	3	2218.2	2218.5	1.2	105.0	50.0		
	10700	PENN	3	2218.1	2218.7	7.8	76.4	6.7		
	9400	TYKW	3	2218	2218.7	2	60.0	15.0		
	9400	HUAN	3	2218.3	2218.6	1.1	64.5	22.5		
	8800	MANI	8	2218.5	2218.6	.3	34.2	7.3		
	500	HIRA	6	2314.5	2315.4	21	110.0	5.0		
	606	SGMR	3	2315.7	2315.9	.6	17.0	7.0		
	606	MANI	4	2315	2315.9	1.6	25.6	6.1		
	410	SGMR	6	2315.8	2316.6	1.5	61.0	30.0		
10	4995	CRON	3	0150	0151.5	5.5	7.0	2.0		
	9750	IRKU	1	0151	0151.3	6	9.0	3.0		
	3750	TYKW	45	0300	0329.3	60	9.0	3.0		
	650	GORK		0300 E	0304 U	4.1	15.0			
	950	GORK		0304 E	0309 U	5.7U	6.6			
	9400	TYKW	45	0310	0312.2	70	32.0	8.0		
	4995	CRON	3	0310.5	0312	6.5	6.0	2.0		
	9750	IRKU	1	0311.7	0312.3	3	22.4	7.5		
	9100	GORK	3	0311.9	0312.4	2.8	27.0			
	8800	MANI	3	0311.8	0312.3	1.5	24.4	7.3		
	4995	MANI	1	0311.6	0312.3	2.2	8.5	2.4		
	9100	GORK	29	0313	0313	1.7	7.8			
	9750	IRKU	1	0328.7	0329.3	3	13.4	4.5		
	9100	GORK	1	0328.7	0329.3	2.7	17.0			
	4995	CRON	3	0328.5	0329	2	4.0	2.0		
	2000	TYKW	1	0328.8	0329	1	6.0	2.0		
	260	ONDR	41	0530	1147	590	40.0			
	245	SGMR	44	0949 E	2341.2	838 D	20.0			
	200	HIRA	27	2336	2352	114	20.0	3.0		
	208	VORO	44	2338	0039.6	82	64.0	18.0		
	100	HIRA	27	2347	0027	193	40.0	10.0		
	9100	GORK	20	0538.3	0544.7	12.3	15.7	7.5		
	9400	TYKW	1	0541	0544	10	8.0	3.0		
	3750	TYKW	20	0541	0544	50	4.0	2.0		
	1420	CRON	8	0543	0544.5	2	12.0	6.0		
	2830	ARCE	20	1031.8	1035.5	4.5				
	9285	ARCE	22	1032.4	1035.5	5.2				
	1500	BERL	1	1059.5E	1059.5		1.8			
	9500	BERL	3	1100.5	1104	12	108.0	31.0		
	9500	BERL	1	1100 E	1100		6.3			
	15400	SGMR	3	1102.8	1104.1	2.7	220.0	90.0		
	35000	SGMR	3	1103.8	1104.4	1.4	135.0	45.0		
	9400	SLOU	4	1103.9	1104.5	3	150.0			
	9285	ARCE	3	1103.6	1104.5	3				
	8800	SGMR	3	1103.3	1104	5.7	105.0	40.0		
	4995	SGMR	3	1103.8	1104	5	15.2	4.0		
	2695	CANR	8	1103	1103.5	1.5	4.0	1.0		
	2695	SGMR	1	1103.8	1103.9	.8	2.2	1.0		
	1500	BERL	1	1103.8E	1103.8		2.0			
	1415	SGMR	1	1103.9	1104.2	2.9	1.8	.9		
	37000	SLOU	4	1104.4	1104.5	1	180.0			
	19000	SLOU	4	1104.2	1104.8	2	278.0			
	2830	ARCE	2	1104	1104.3	2				
	1420	ARCE	2	1104.1	1104.5	2				
	9285	ARCE	29	1106.6		8.4				
	15400	SGMR	3	1120.7	1121.5	3.7	19.3	8.0		
	9500	BERL	3	1120.5	1121.5	7.5	17.0	4.6		
	2695	CANR	3	1120	1121.5	3	3.0	1.0		
	9285	ARCE	22	1121.2	1122.2	19 D				
	8800	SGMR	3	1121.2	1121.7	3.6	10.1	4.0		
	4995	SGMR	1	1121.1	1121.7	7.1	9.0	3.4		
	2830	ARCE	20	1121.3	1122	15 U				
	950	GORK	4	1147.5	1147.7	1.1	5.8			
	650	GORK	41	1147.5	1147.7	1.2	10.0			
	650	GORK		1147.5	1148.3		10.0			
	9500	BERL	3	1209.5	1210	25	40.0	13.0		
	1500	BERL	1	1209.3E	1209.3		2.4			
	650	GORK	41	1227.3	1227.4	1	5.7			
	650	GORK		1227.3	1228.1		6.0			
	4995	CANR	3	1302.5	1305	4.5	14.0	5.0		
	4995	CANR	3	1302.5	1303	2.5	13.0	5.0		
	15400	SGMR	3	1304.9	1305.7	1.9	20.7	8.2		
	10700	PENN	3	1304.3	1305.8	6.5	26.4	3.9		
	9500	BERL	4	1304.4	1305.7	3.4	24.0	7.7		

SOLAR RADIO EMISSION
OUTSTANDING OCCURRENCES

AUGUST 1972

AUG 1972	FREQUENCY	STATION	TYPE	STARTING TIME UT	TIME OF MAXIMUM UT	DURATION MINUTES	FLUX DENSITY 10^{-22} Wm^{-2} Hz^{-1} PEAK	FLUX DENSITY MEAN	INT	REMARKS
10	9400	HUAN	3	1304.7	1305.4	1.7	28.7	11.7		
	4995	SGMR	3	1304.9	1305.7	6.3	14.4	4.8		
	9285	ARCE	2	1305	1306.1	6				
	8800	SGMR	3	1305.2	1305.8	3.1	24.2	9.6		
	2695	SGMR	1	1305.2	1305.6	.8	1.4	.7		
	4995	CANR	3	1320	1321	5.5	11.0	4.0		
	2695	BOUL	3	1500	1501.5	2.5	3.0	1.0		
	2695	CANR	3	1505	1511.5	3.5	5.0	1.0		
	9285	ARCE	22	1506.2	1511.6	28				
	2830	ARCE	20	1506.1	1512	15 U				
	4995	CANR	3	1508.5	1510.5	6.5	11.0	4.0		
	9500	BERL	20	1509.5	1511	28	8.5	2.8		
	4995	SGMR	20	1509.9	1511.5	10.8	10.0	4.0		
	4995	BOUL	3	1509.5	1501.5	3.5	9.0	3.0		
	2695	SGMR	5	1509.2	1511.5	7.1	3.4	1.2		
	15400	SGMR	5	1510.5	1511.1	7.7	11.7	5.0		
	8800	SGMR	5	1510.3	1511.2	14.8	10.1	4.2		
	2800	OTTA	1	1510	1511.5	4	2.8	1.4		
	18	BOUL	6	1755	1759	9			2	
	18	MCMA	6	1759	1803	6			2	
	960	PENN	45	1816.3	1817	1.9	26.4	2.8		
	960	PENN	45	1825.6	1827.9	3.1	43.3	4.8		
	2800	OTTA	20	2045	2050	45	3.6	1.8		
	15400	SGMR	20	2046	2052.3	21.3	30.8	12.0		
	10700	PENN	3	2046.4	2052.4	13.6	19.3	7.5		
	9400	HUAN	20	2048	2053.7	8.8	11.5	5.1		
	2700	PENN	20	2048.2	2049.2	12.3	5.3	2.6		
	1420	BOUL	4	2048.5	2050.5	3	15.0	6.0		
	1415	SGMR	40	2048.5	2050.4	4.4	19.0	4.0		
	2695	PENT	20	2325	2350	155	10.4	6.0		
	9400	TYKW	20	2330	2340	150	30.0	15.0		
	3750	TYKW	20	2332	2340	150	8.0	5.0		
	2000	TYKW	45	2333	2349	40	9.0	3.0		
	1000	TYKW	45	2337	2349.9	50	17.0	2.0		
	2695	BOUL	3	2346.5	2349.5	4.5	6.0	2.0		
	1420	CRON	3	2347.5	2349	4	11.0	3.0		
	2695	CRON	3	2348.5	2349	3	2.0	1.0		
	1420	BOUL	3	2348	2349.5	4	9.0	3.0		
11	1420	BOUL	21	0004.5	0005	5.5	5.0	1.0		
	1420	CRON	8	0004	0005	1	5.0	2.0		
	100	HIRA	6	0049.5	0050.6	2	40.0	30.0		
	100	HIRA	6	0052	0053	2.5	70.0	40.0		
	100	HIRA	6	0102	0102.9	2.5	80.0	20.0		
	1420	BOUL	45	0106	0107	3	5.0	1.0		
	9400	TYKW	20	0350	0404	110	12.0	5.0		
	3750	TYKW	20	0400	0410	100	5.0	2.0		
	9750	IRKU		0458.8	0459		18.8			
	9750	IRKU	20	0458.8	0504.7	10	47.5	11.5		
	9400	TYKW	3	0458	0459	3	18.0	5.0		
	9100	GORK	21	0458.7	0459.4	12.2	20.0	6.0		
	9400	TYKW	3	0503	0504.7	4	50.0	10.0		
	8800	MANI	3	0503.6	0504.7	10.2	34.7	11.6		
	4995	MANI	3	0503.6	0504.7	10.2	14.9	6.2		
	4995	CRON	3	0503.5	0504.5	4	7.0	4.0		
	9100	GORK	3	0504.4	0505	1.2	30.0	15.0		
	3750	TYKW	1	0504	0504.8	2	3.0	1.0		
	260	ONDR	41	0510	0650.5	350	35.0			
	9400	TYKW	20	0518	0522	15	6.0	3.0		
	3100	CRIM	20	0625	0722	105	4.0	1.0		
	606	MANI	4	0732.1	0732.4	.9	37.4	5.2		
	9100	GORK	20	0832	0852.3	35.5	69.0	30.0		
	23	POTS	5	1045.7	1045.8	.4	2000.0	700.0		
	2830	ARCE	22	1056.6	1105.6	20				
	15400	SGMR	3	1059.1	1059.7	1.6	10.7	2.5		
	9285	ARCE	1	1059.8	1100	1.3				
	8800	SGMR	1	1059.5	1059.8	.9	4.7	1.0		
	2830	ARCE	23	1126.6	1356.5	240 U				
	9285	ARCE	21	1127 U	1231.5	300 D				
	950	GORK	4	1140.8	1142.2	3	13.0			
	200	GORK	6	1205.6	1205.7	.7	200.0	100.0		
	100	GORK	6	1205.7	1206	.8	25.0	10.0		
	4995	CANR	41	1208.5	1219	104.5	82.0	24.0		
	2695	BOUL	45	1208.5	1216	13.5	4.0	1.0		
	15400	SGMR	3	1209.8	1210.1	.9	12.1	3.0		
	10700	PENN	3	1209.8	1210.2	2.1	35.2	4.9		
	9400	HUAN	3	1209.5	1210.2	1.6	41.5	13.5		
	9100	GORK	3	1209.8	1210.2	1	39.0	14.5		
	4995	SGMR	3	1209.8	1210.2	3.6	23.4	6.0		
	2800	OTTA	3	1209.8	1210	2	23.0	5.8		
	2700	PENN	3	1209.5	1210.1	5.4	71.4	4.0		
	2695	CANR	41	1209.5	1218	92	127.0	35.0		
	2695	SGMR	4	1209.7	1210.1	1.7	23.1	6.0		
	1420	CANR	3	1209.5	1210.5	1.5	3.0	1.0		
	1420	BOUL	45	1209.5	1216	9	4.0	1.0		
	9285	ARCE	3	1210	1210.6	3				
	8800	SGMR	3	1210	1210.3	2.1	58.0	13.0		
	2950	GORK	3	1210	1210.2	1	29.0	8.5		
	2830	ARCE	3	1210.1	1210.4	1.3				
	1415	SGMR	1	1210.7	1211.3	2.3	1.4	.6		

SOLAR RADIO EMISSION
OUTSTANDING OCCURRENCES

AUGUST 1972

AUG 1972	FREQUENCY STATION	TYPE	STARTING TIME UT	TIME OF MAXIMUM UT	DURATION MINUTES	FLUX DENSITY 10^{-22} Wm^{-2} Hz^{-1} PEAK	FLUX DENSITY MEAN	INT	REMARKS
11	9400 SLOU	3	1211	1211.2	2	49.0			
	2800 OTTA	21	1215	1350	340	8.2	4.8		
	15400 SGMR	4	1216.5	1218.7	5.7	78.0	20.0		
	10700 PENN	3	1216.9	1218.7	13.2	159.0	19.4		
	9500 BERL	46	1216.5	1219.1	41 U	130.0			
	9285 ARCE	4	1216.8	1219.1	3.6				
	4995 SGMR	4	1216.8	1218.8	5	113.0	29.0		
	2950 GORK	45	1216.6	1217.6	13.6	143.0			
	2950 GORK		1216.6	1218.9		134.0			
	2830 ARCE	46	1216.9	1217.5	3.9				
	2830 ARCE		1216.9	1217.5	1.9				
	2830 ARCE		1218.8	1219	2				
	2800 OTTA	45	1216.7	1217.5	4.2	99.0	43.0		
	2700 PENN	45	1216.5	1217.3	4.1	149.0	76.3		
	2695 SGMR	46	1216.6	1217.3	6.9	118.0	24.0		
	1500 BERL	46	1216.5	1217.6	38	47.0			
	1420 CANR	41	1216.5	1248.5	113.5	384.0	24.0		
	1415 SGMR	4	1216.7	1217.5	4.7	43.4	11.0		
	9400 HUAN	45	1217.1	1218.7	2.6	152.8	51.9		
	9400 SLOU	4	1217	1219	4	203.0			
	9100 GORK	4	1217.7	1218.9	5.4	118.0			
	8800 SGMR	4	1217	1218.8	4.2	219.0	50.0		
	1420 ARCE	4	1217.1	1217.9	5 U				
	650 GORK	1	1217	1217.1	.4	5.0	2.5		
	950 GORK	2	1219.4	1220.4	3.8	3.6	1.6		
	9285 ARCE	29	1220.4		7				
	2950 GORK	29	1220.4	1220.4	9.9	19.2	9.5		
	2830 ARCE	29	1220.8		7				
	2700 PENN	29	1220.6	1220.6	138	22.7	11.4		
	8800 SGMR	30	1221.2	1246.6	47.5	19.6	8.0		
	4995 SGMR	30	1221.8	1221.8	78.3	9.0	4.0		
	2800 OTTA	29	1221		9	9.2	4.6		
	1415 SGMR	30	1221.4	1221.4	30.6	4.0	2.0		
	15400 SGMR	30	1222.2	1245	43.2	35.5	15.0		
	2695 SGMR	30	1223.5	1223.5	78.5	10.2	5.0		
	1415 SGMR	46	1229.7	1231.6	17.3	105.0	20.0		
	2695 SGMR	45	1230.5	1235.5	17	78.0	16.0		
	960 PENN	45	1230.7	1235.6	16.1	48.2	15.4		
	950 GORK	46	1230.5	1234.2	8	54.0			
	950 GORK		1230.5	1235.3		55.0			
	930 BORD	45	1230	1235.5	24	78.0	15.0		
	260 ONDR	45	1230	1237	30	35.0			
	2950 GORK	22	1231.1	1235.6	27.4	100.0			
	2800 OTTA	45	1231	1235.5	17	70.0	21.4		
	2800 OTTA	45	1231	1234.1	4	41.0			
	2800 OTTA	45	1235	1235.5	2.6	70.0			
	2800 OTTA	45	1237.6	1239	2.4	47.0			
	2800 OTTA	45	1240	1241	8	52.0			
	2700 PENN	45	1231.4	1235.6	18	107.0	31.9		
	1420 ARCE	46	1231.1	1235.9	18				
	1420 ARCE		1231.1	1232	2.7				
	1420 ARCE		1235.5	1235.9	3.4				
	1420 ARCE		1238.9	1239.5	1.9				
	1420 ARCE		1240.8	1241.4	8.3				
	29 UPIC	45	1231	1304.5	37.5				
	650 GORK	4	1231	1235.7	8.7	68.0	34.0		
	606 SGMR	4	1231.2	1235.5	19	66.0	20.0		
	410 SGMR	6	1231.5	1236.1	20.8	210.0	40.0		
	408 TRST	45	1231.9	1236.3	6.2	220.0U			
	245 SGMR	6	1231.2	1238.7	20.3	29.6	14.0		
	10700 PENN	3	1232.4	1239.1	10	88.1	43.3		
	8800 SGMR	45	1232.3	1239.2	14.3	123.0	22.0		
	4995 SGMR	45	1232.8	1238.9	16.3	89.0	18.0		
	2830 ARCE	45	1232.2	1235.8	11.4				
	2830 ARCE		1232.2	1234.5	2.9				
	2830 ARCE		1235.1	1235.8	3				
	2830 ARCE		1238.1	1239.1	1.9				
	2830 ARCE		1240	1241.1	3.6				
	15400 SGMR	45	1233.9	1239.6	8.6	56.0	11.0		
	9400 SLOU	45	1233	1239	9	108.0			
	9100 GORK	46	1233.4	1236	8.6	76.0			
	9100 GORK		1233.4	1239.9		79.0			
	1420 ARCE		1233.8	1234.6	1.7				
	9400 HUAN	45	1234.4	1238.7	9.2	101.8	49.7		
	9285 ARCE	45	1234	1239.5	9.4				
	9285 ARCE		1234	1236.4	4.1				
	9285 ARCE		1238.1	1239.5	5.3				
	225 HARS	45	1234.5	1239	17	40.0	15.0		
	200 GORK	48	1234.9	1238	3.3	15000.0			
	37000 SLOU	20	1235	1245	15	40.0			
	19000 SLOU	45	1235	1240	7 U	54.0			
	100 GORK	48	1235.6	1241.7	28.4	7000.0			
	200 GORK	44	1238.3		26 D				
	113 POTS	45	1238.3	1241.8	5.4	700.0	5.0		
	950 GORK	29	1238.2	1239.3	18.6	20.5	70.0		
	650 GORK	29	1239.7	1241.5	13	14.0	9.0		
	10700 PENN	29	1242.4	1242.4	26.7	30.8	9.7		
	9100 GORK	29	1242	1242 U	17.5	20.0	15.4		
	18 HCMA	41	1300	1302	6		10.0		
	4995 BOUL	3	1302	1304.5	6.5	12.0	4.0	2	

SOLAR RADIO EMISSION
OUTSTANDING OCCURRENCES

AUGUST 1972

AUG 1972	FREQUENCY	STATION	TYPE	STARTING TIME UT	TIME OF MAXIMUM UT	DURATION MINUTES	FLUX DENSITY 10^{-22} Wm^{-2} Hz^{-1} PEAK	FLUX DENSITY MEAN	INT	REMARKS
11	2695	BOUL	3	1302.5	1303.5	1.5	4.0	2.0		
	9400	HUAN	20	1310.4	1329.2	23.4	49.9	19.6		
	1420	BOUL	3	1310	1320.5	35.5	69.0	22.0		
	9285	ARCE	20	1312.5	1319.9	41				
	2695	BOUL	3	1312	1320.5	29.5	79.0	35.0		
	10700	PENN	20	1313	1319.6	44.8	39.7	11.8		
	4995	SGMR	3	1313.7	1319.5	19.8	55.0	22.0		
	4995	BOUL	3	1313	1319.5	31	68.0	21.0		
	2800	OTTA	3	1313	1319.6	27	84.0	28.0		
	2700	PENN	3	1313.4	1319.7	30.5	125.0	38.7		
	2695	SGMR	3	1313.4	1319.5	28.6	92.0	30.0		
	1500	BERL	4	1313	1319.9	27	74.0	34.0		
	1420	ARCE	3	1313.4	1319.8	23.5				
	1415	SGMR	3	1313.2	1319.9	27.7	72.0	25.0		
	225	HARS	45	1313.5	1315	5	50.0	20.0		
	960	PENN	3	1313.2	1320	20.4	36.6	17.0		
	930	BORD	5	1313	1320	26	56.0	20.0		
	606	SGMR	20	1313.5	1321.5	21.2	23.0	10.0		
	410	SGMR	6	1313.9	1315.7	20.1	12.2	3.0		
	15400	SGMR	20	1314.1	1319.5	17.4	14.9	7.0		
	9400	SLOU	20	1314	1320	17	53.0			
	8800	SGMR	22	1314.3	1319	19.2	56.9	22.0		
	2830	ARCE	3	1314	1320	20.6				
	245	SGMR	6	1314	1315.2	20.7	12.6	3.0		
	9500	BERL	46	1315 U	1317.9	15 U	34.0			
	1420	BOUL	45	1342	1349	9	348.0	82.0		
	1500	BERL	46	1343	1345.7	27	360.0			
	1415	SGMR	46	1344.3	1348	20	405.0	95.0		
	808	ONDR	45	1344.5	1349	5.5				
	2695	SGMR	20	1345	1349	15.5	1.9	1.0		
	8800	SGMR	3	1349.1	1349.2	.6	35.0	8.0		
	4995	SGMR	1	1349	1349.1	.2	3.9	1.5		
	1420	BOUL	45	1355	1356.5	6.5	6.0	1.0		
	4995	CANR	3	1417	1419	4	11.0	4.0		
	15400	SGMR	3	1418.4	1420	3.6	22.7	4.0		
	10700	PENN	3	1418.3	1420.1	9.6	27.3	7.5		
	9500	BERL	3	1418	1419.7	5	29.0	9.0		
	9400	HUAN	3	1418.4	1419.9	5.4	28.3	9.8		
	9400	SLOU	3	1418.8	1420	3	31.0			
	8800	SGMR	3	1418.7	1420.1	9.2	47.8	8.0		
	4995	SGMR	1	1418.7	1420.1	4.9	9.8	2.0		
	4995	BOUL	3	1418	1419.5	3.5	11.0	4.0		
	2695	CANR	8	1418.5	1419	1	8.0	3.0		
	2695	SGMR	2	1418.8	1419.4	1.2	6.8	1.5		
	9285	ARCE	3	1419.2	1420.3	3.2				
	2800	OTTA	1	1419	1419.2	1	2.2	1.1		
	2695	BOUL	8	1419	1419.5	1	9.0	4.0		
	1415	SGMR	1	1419	1422.1	8.6	1.6	1.0		
	1420	BOUL	3	1451.5	1454.5	8	2.0	1.0		
	2695	CANR	8	1520	1521	1.5	6.0	3.0		
	1420	CANR	45	1520	1521	1.5	9.0	4.0		
	2800	OTTA	20	1830	1930	130	2.4	1.2		
	208	VORO	44	2110	2307.6	230	33.0			
	100	HIRA	6	2147.5	2149.9	3.5	25.0	12.0		
	100	HIRA	6	2154.7	2156	3.5	20.0	10.0		
	100	HIRA	6	2350.7	2351.1	1	30.0	10.0		
12	3750	TYKW	1	0040	0042	6	5.0	2.0		
	2695	PENT	1	0040	0042	5	2.4	1.2		
	2695	BOUL	3	0040	0042.5	5	5.0	2.0		
	200	GORK	44	0300 E		420 D		10.0		
	260	ONDR	44	0510	0752.5	620	30.0			
	100	GORK	44	0521		108		7.0		
	210	IZMI	44	0700		300	50.0			
	100	GORK	44	0757		123		10.0		
	100	HIRA	43	0826	0857.7	59 D	90.0	20.0		
	245	SGMR	44	0952 E	1416.7	833 D	40.0			
	9100	GORK	20	0303	0318.4	23.3	130.0	39.0		
	950	GORK	20	0306	0314.8	19	27.0	5.0		
	100	GORK	41	0313.2	0313.5	4.5	50.0			
	100	GORK		0313.2	0316.1		30.0			
	100	HIRA	6	0313	0313.3	1	30.0	15.0		
	650	GORK	3	0316.4	0319.6	4.6	15.0	7.5		
	650	GORK	29	0321	0321.4	5.4	3.0	1.5		
	9500	BERL	3	0434	0436.3	11	55.0	21.0		
	8800	MANI	3	0434.7	0435.5	4.4	57.6	7.9		
	4995	MANI	3	0434.9	0435.5	5.2	14.8	4.9		
	9750	IRKU	3	0435.6	0436.3	8	58.0	12.9		
	9400	TYKW	3	0435	0436.2	8	70.0	17.0		
	9100	GORK	3	0435.7	0439.4	7.3	62.0	15.0		
	3750	TYKW	1	0435.5	0436.2	4	3.0	1.0		
	4995	CRON	3	0436	0436.5	6	13.0	4.0		
	100	HIRA	27	0520	0532	110	15.0	5.0		
	4995	CRON	45	0656.5	0704	13.5	18.0	3.0		
	3750	TYKW	45	0657	0703.5	10	7.0	2.0		
	9500	BERL	3	0703	0703.5	7.5	13.0	4.7		
	9400	TYKW	3	0703	0703.5	2	15.0	5.0		
	9285	ARCE	1	0703.6	0704	1.3				
	9285	ARCE	29	0704.9		5.7				
	9285	ARCE	22	0723 U	0748	74 U				

SOLAR RADIO EMISSION
OUTSTANDING OCCURRENCES

AUGUST 1972

AUG 1972	FREQUENCY	STATION	TYPE	STARTING TIME UT	TIME OF MAXIMUM UT	DURATION MINUTES	FLUX DENSITY 10^{-22} Wm^{-2} Hz^{-1} PEAK	FLUX DENSITY 10^{-22} Wm^{-2} Hz^{-1} MEAN	INT	REMARKS
	2830	ARCE	20	0738.6U	0747.8	22 U				
	4995	CANR	3	0744.5	0746	5	9.0	3.0		
	2695	CANR	3	0744	0746.5	6	6.0	2.0		
	3750	TYKW	1	0745	0747	8	8.0	3.0		
	2695	CRON	3	0745.5	0747.5	5.5	5.0	2.0		
	9400	TYKW	1	0746	0747	4	4.0	2.0		
	4995	CANR	3	0758	0758.5	1.5	6.0	2.0		
	2830	ARCE	1	0810	0810.2	.7				
	1420	ARCE	40	0810	0810.4	2				
	4995	CANR	3	1429	1434.5	14.5	21.0	8.0		
	4995	BOUL	45	1430	1435	11.5	24.0	5.0		
	2800	OTTA	20	1430	1435	40	4.6	2.2		
	4995	SGMR	20	1431.7	1435.1	21.4	20.6	6.2		
	2700	PENN	20	1431.6	1435.3	17.8	8.4	4.2		
	2695	CANR	21	1431	1435	22.5	5.0	1.0		
	2695	SGMR	20	1431.7	1435.1	20.1	5.1	1.3		
	8800	SGMR	20	1433.2	1435.6	14.1	5.5	1.4		
	18	MCMA	6	1936	1939	4			1	
	18	BOUL	6	1937	1940	9			1	
	2800	OTTA	24	2010		30	1.8			
	18	MCMA	41	2021	2026	8			1	
	100	HIRA	27	2044	2130	70	10.0	7.0		
	100	HIRA	27	2206	2319	130	15.0	8.0		
13	200	GORK	44	0300 E		420 D		10.0		
	100	GORK	44	0500		300		10.0		
	100	HIRA	43	0508	0550	247 D	75.0	15.0		
	260	ONDR	44	0530	1240	610	40.0			
	410	SGMR	44	0953 E	1232.2	830 D	24.0			
	245	SGMR	44	0953 E	1315.8	830 D	46.6			
	245	BOUL	42	1211	1231	203			2	
	100	HIRA	43	2000	0017	442 D	30.0	15.0		
	208	VORO	44	2110	2237	165	49.2			
	2695	CANR	3	0726	0727	2.5	3.0	1.0		
	225	HARS	45	1042	1043	1	165.0	40.0		
	234	POTS	5	1310.3	1310.3	.1	250.0	80.0		
	9285	ARCE	1	1600.5	1600.9	1				
	2830	ARCE	1	1600.4	1600.8	1				
	1420	ARCE	1	1600.5	1600.9	1.2				
14	200	GORK	44	0300 E		540		10.0		
	950	GORK	20	0304	0308.1	9.1	6.4	3.2		
	260	ONDR	41	0510	0540	110	35.0			
	245	SGMR	44	0954 E	1423.8	465 D	32.3			
	100	GORK	44	1030		150		5.0		
	260	ONDR	41	1310	1421.5	130	30.0			
	113	POTS	45	1157	1157.2	.4	300.0	75.0		
	29	UPIC	45	1157.5	1157.5	1.5				
	2695	CANR	8	1210.5	1211	1.5	4.0	1.0		
	1420	CANR	8	1211	1212.5	1.5	10.0	4.0		
	18	MCMA	42	1418	1427	18			1	
	2695	CANR	8	1527.5	1528.5	2	12.0	5.0		
	1420	CANR	8	1528.5	1529	1	13.0	6.0		
	237	TRST	41	1648.8	1649	.4	110.0			
	100	HIRA	6	1958.2	1958.6	1	100.0	40.0		
15	200	GORK	44	0400 E		480		5.0		
	100	GORK	44	0606		84		5.0		
	2695	CANR	3	0735.5	0736	1	3.0	1.0		
	29	UPIC	45	0911	0911.5	1				
	536	ONDR	45	1139.5	1140	1	75.0			
	2695	SGMR	46	1733.4	1740.1	67	28.8	6.0		
	960	PENN	20	1733.1	1741.8	32.5	13.4	2.7		
	2700	PENN	3	1736.7	1740.2	5.4	33.5	12.5		
	2800	OTTA	46	1737	1756	31	26.6	10.6		
	2800	OTTA	46	1737	1740.1	14	21.8			
	2800	OTTA	46	1751	1756	17	26.6			
	2695	CANR	45	1737	1756	35.5	28.0	7.0		
	2695	BOUL	45	1738.5	1757	28.5	26.0	8.0		
	1420	CANR	45	1738.5	1757	29.5	13.0	5.0		
	1420	BOUL	45	1738.5	1757	31.5	11.0	3.0		
	1415	SGMR	22	1738.1	1756.4	28.9	10.4	2.0		
	9400	HUAN	20	1739.3	1757.7	29.1	18.8	8.2		
	4995	SGMR	20	1739.8	1756.4	58.1	13.7	2.8		
	18	BOUL	6	1739	1742	10			1	
	606	SGMR	22	1739	1758.5	31.4	7.3	1.5		
	10700	PENN	20	1740.5	1754.5	56.1	12.0	6.0		
	7000	SAOP	22	1740.3		51.8	18.3			
	18	MCMA	6	1740	1742	3			1	
	4995	CANR	3	1741	1756	30	19.0	5.0		
	15400	SGMR	20	1742.2	1757.2	34.9	15.9	3.0		
	8800	SGMR	20	1742	1756.5	35.3	15.8	3.0		
	2700	PENN	29	1742.1	1742.1	73.6	13.0	6.5		
	4995	BOUL	3	1744	1757	23	9.0	2.0		
	2700	PENN	3	1751.9	1756.2	13.5	27.9	9.8		
	2800	OTTA	29	1808		75	5.2	2.0		
16	200	GORK	44	0306		234		5.0		
	100	GORK	48	1225.9	1232.1	9.5	2000.0			
	113	POTS	45	1227.5	1231.5	14.4U	1400.0	30.0		

SOLAR RADIO EMISSION
OUTSTANDING OCCURRENCES

AUGUST 1972

AUG. 1972	FREQUENCY STATION	TYPE	STARTING TIME UT	TIME OF MAXIMUM UT	DURATION MINUTES	FLUX DENSITY 10^{-22} Wm^{-2} Hz^{-1} PEAK	FLUX DENSITY 10^{-22} Wm^{-2} Hz^{-1} MEAN	INT	REMARKS
	100 GORK	6	1240.9	1241.1	1.2	80.0	40.0		
	2800 OTTA	20	1425	1530	125	1.8	0.9		
17	100 HIRA	27	0132	0150	145	35.0	10.0		
	260 ONDR	45	0750	0801	25	55.0			
	536 ONDR	5	0757.5	0757.5	2.5	45.0			
	536 ONDR	5	0808	0808	.5	45.0			
	536 ONDR	5	0900	0905	.5	50.0			
	260 ONDR	45	0902.5	0902.5	1.5	30.0			
	260 ONDR	45	1105 D	1106.5	2	35.0			
	200 GORK	44	1120		100 D		5.0		
	536 ONDR	5	1208.5D	1208.5	1.5	50.0			
	808 ONDR	45	1220	1220.5	6.5				
	808 ONDR	45	1251.5	1253	3				
	536 ONDR	45	1405 D	1407.5	3	65.0			
	260 ONDR	45	1405 D	1405	2.5	25.0			
	808 ONDR	45	1406 D		4 D				
18	1415 MANI	1	0713.2	0714.3	2.2	5.9	2.0		
	606 MANI	40	0713.4	0713.8	1.3	54.0	15.8		
	100 GORK	44	1200		60 D		5.0		
	808 ONDR	45	1214 D	1218	6				
	225 HARS	45	1405	1405.5	1.5	75.0	25.0		
	2700 PENN	8	1546.5	1546.6	.2	282.0			
	2800 OTTA	20	1620	1735	85	1.4	0.7		
	606 SGMR	1	1725	1725.2	.4	12.0	2.5		
	2800 OTTA	24	1810		30	2.2			
	200 HIRA	6	2249.5	2250.5	3	90.0	30.0		
	2695 PENT	24	2315		75	3.1			
19	1420 CRON	3	0649.5	0650.5	4	4.0	2.0		
	2695 CRON	21	0658.5	0659.5	8.5	7.0	2.0		
	3750 TYKW	1	0659.8	0700.2	2	3.0	1.0		
	2830 ARCE	2	0659.6	0700.2	2				
	2000 TYKW	1	0659.7	0700.9	3	5.0	2.0		
	1500 BERL	2	0659.5	0700.3	2.5	3.4	1.3		
	1420 ARCE	1	0659.7	0700.5	1.8				
	9285 ARCE	1	0700.3	0700.7	1				
	2695 CRON	3	0900.5	0901.5	1	4.0	1.0		
	1420 CRON	3	0902	0902.5	1.5	2.0	1.0		
	2695 CANR	45	1032	1033	6.5	69.0	27.0		
	4995 CANR	3	1121.5	1122.5	2	6.0	2.0		
	2800 OTTA	24	1249.5		1	1.0			
	245 SGMR	43	1300	1434	226.1	12.3			
	29 UPIC	45	1303	1303.5	1.5				
	4995 CANR	8	1309.5	1312.5	6	140.0	62.0		
	2700 PENN	45	1309.9	1312.3	4.3	108.0	31.8		
	9400 HUAN	45	1310.7	1312.2	2.6	852.0	260.9		
	7000 SAOP	42	1310.9		8.9				
	7000 SAOP	47	1310.9	1312.4	2.9	889.1			
	4995 SGMR	3	1310.9	1312.3	11.8	227.0	58.0		
	2830 ARCE	4	1310	1312.3	5.2				
	2800 OTTA	4	1310.7	1312.1	5.3	65.0	27.4		
	2695 CANR	8	1310	1312	5	62.0	25.0		
	2695 SGMR	3	1310.7	1312.3	14.9	58.0	15.0		
	1500 BERL	4	1310.7	1312.3	4	7.6	3.0		
	19000 SLOU	3	1311.9	1312.5	2	215.0			
	15400 SGMR	3	1311	1312.3	11.7	405.0	100.0		
	10700 PENN	47	1311	1312.4	2.8	588.0	114.0		
	9500 BERL	4	1311	1312	11	584.0			
	9400 SLOU	4	1311.9	1313	3	744.0			
	9285 ARCE	4	1311.2	1312.4	2.6				
	8800 SGMR	47	1311.2	1312.3	6.4	667.0	170.0		
	1420 ARCE	4	1311	1312.5	3.3				
	1420 CANR	3	1311	1312.5	4	8.0	3.0		
	1415 SGMR	20	1311	1312.5	11	6.0	1.5		
	930 BORD	45	1311	1312	2	12.0	2.0		
	37000 SLOU	3	1312.8	1313	1	80.0			
	10700 PENN	29	1313.8	1313.8	27.1	8.7	4.4		
	9400 HUAN	29	1313.3	1313.3	46.2	32.4	4.4		
	9285 ARCE	29	1313.8		68 U				
	7000 SAOP	29	1313.8		6				
	2700 PENN	29	1314.2	1314.2	34.6	10.0	5.0		
	2830 ARCE	29	1315.2		65				
	2800 OTTA	29	1316		45	2.0	1.0		
	536 ONDR	5	1358	1358	2	40.0			
	2800 OTTA	21	1420	1450	150	4.6	2.6		
	9500 BERL	46	1427.5	1434.4	32 U	44.0			
	2700 PENN	3	1429	1434.1	8	97.7	24.8		
	4995 SGMR	3	1430.2	1434.1	21.1	77.0	19.0		
	2800 OTTA	4	1430	1434	10	29.0	5.5		
	2695 CANR	3	1430.5	1434	8	54.0	23.0		
	2695 SGMR	3	1430.6	1434.1	9.4	52.0	13.0		
	1500 BERL	4	1430	1434.2	35 U	18.0	6.3		
	1415 SGMR	20	1430.4	1434.6	25.5	18.0	4.4		
	4995 CANR	8	1431.5	1433.5	7	55.0	26.0		
	15400 SGMR	20	1432.6	1434.4	12.9	26.0	6.4		
	10700 PENN	3	1432.2	1434.4	21.7	35.3	9.6		
	9400 HUAN	3	1432.1	1433.9	21.1	47.7	13.6		
	9285 ARCE	3	1432.7	1434.5	3.3				

SOLAR RADIO EMISSION
OUTSTANDING OCCURRENCES

AUGUST 1972

AUG. 1972	FREQUENCY	STATION	TYPE	STARTING TIME UT	TIME OF MAXIMUM UT	DURATION MINUTES	FLUX DENSITY 10^{-22} Wm^{-2} Hz^{-1} PEAK	FLUX DENSITY 10^{-22} Wm^{-2} Hz^{-1} MEAN	INT	REMARKS
	8800	SGMR	3	1432.5	1434.2	19.4	57.0	14.0		
	7000	SAOP	3	1432.8	1434.2	2.3	73.0	36.6		
	2830	ARCE	3	1432.1	1434.1	6.4				
	1420	ARCE	3	1432.4	1434.6	6				
	1420	CANR	3	1432	1434.5	6.5	18.0	8.0		
	606	SGMR	4	1432.9	1433.7	20.1	73.0	18.0		
	9400	SLOU	3	1433.5	1434.6	2.5	49.0			
	930	BORD	45	1433	1435.5	5	17.0	4.0		
	410	SGMR	6	1433.5	1434.3	2.4	31.0	7.8		
	19000	SLOU	3	1434	1434.7	1.5	20.0			
	18	MCMA	6	1434	1435	3			1	
	7000	SAOP	29	1435.1		16				
	29	UPIC	45	1435	1440	11				
	9285	ARCE	29	1436		54				
	2700	PENN	29	1437	1437	42.2	8.1	4.1		
	113	POTS	45	1438.8	1440.4	3	200.0	20.0		
	1420	BOUL	1	1601.5	1602.5	1.5	2.0	1.0		
	2800	OTTA	21	1910	1935	100	2.8	1.4		
	18	BOUL	6	1917	1921	6			2	
	2700	PENN	3	1918.6	1920.4	3	11.9	3.4		
	18	MCMA	6	1918	1921	4			1	
	2800	OTTA	1	1919	1920	1.5	3.0	1.5		
	2695	SGMR	1	1919	1920.3	2.7	5.7	2.4		
	2695	BOUL	8	1919.5	1921	2	6.0	2.0		
	1420	BOUL	45	1919.5	1920	2	10.0	2.0		
	1415	SGMR	1	1919.1	1919.5	2.4	8.0	3.0		
	1420	BOUL	3	1931.5	1933	2.5	2.0	1.0		
	2800	OTTA	20	2100	2107	40	2.4	1.2		
	1420	BOUL	3	2105	2107	3.5	2.0	1.0		
	18	BOUL	6	2105	2107	3			1	
	18	MCMA	6	2105	2107	3			1	
	2800	OTTA	20	2155	2210	45	1.8	0.9		
20	4995	BOUL	3	0048	0049	2	9.0	2.0		
	1415	MANI	22	0049.9	0100.5	17.2	4.7	1.9		
	3750	TYKW	20	0053	0100	30	2.0	1.0		
	2000	TYKW	45	0054	0100.3	25	4.0	1.0		
	1000	TYKW	45	0054	0100.3	11	3.0	1.0		
	606	MANI	20	0054.8	0059.2	10.6	1.3	.7		
	9400	TYKW	20	0055	0100	20	3.0	1.0		
	2695	MANI	1	0058.9	0101.8	4.5	5.4	1.8		
	100	HIRA	6	0059	0102.5U	7	35.0	18.0		
	100	HIRA	6	0211.5	0212	1	70.0	20.0		
	100	HIRA	6	0538	0538.4	1	140.0	50.0		
	950	GORK	23	0533.7	0541.2	13.8	10.3			
	3750	TYKW	45	0537	0538.2	15	5.0	1.0		
	2000	TYKW	45	0538	0538.2	3	4.0	1.0		
	1000	TYKW	40	0538	0538.1	7	175.0D	3.0		
	113	POTS	41	0538	0538.4	2.2	420.0	15.0		
	100	GORK	41	0538.5	0539.1	6.9	150.0			
	100	GORK		0538.5	0540.7		150.0			
	950	GORK	4	0538.7	0538.7	.5	51.0	18.0		
	100	HIRA	6	0539.5	0540.3	1	120.0	40.0		
	536	ONDR	5	0557	0557	.5	70.0			
	536	ONDR	5	0939	0939	.5	60.0			
	2695	CANR	3	1306.5	1308	3.5	3.0	1.0		
	536	ONDR	5	1306.5	1306.5	1	50.0			
	1500	BERL	1	1307.8E	1307.8		1.7			
	2800	OTTA	1	1308	1308.2	1	1.2	0.6		
	1420	CANR	3	1308	1308.5	1.5	2.0	1.0		
	536	ONDR	5	1439	1439	1	90.0			
	2800	OTTA	21	1800	1825	95	4.2	2.0		
	2700	PENN	20	1808.7	1809.8	77.7	21.8	3.9		
	2695	CANR	8	1808	1809	2	12.0	5.0		
	2800	OTTA	3	1809	1809.7	2	11.0	3.6		
	2695	BOUL	8	1809	1810	1.5	10.0	4.0		
	2695	SGMR	1	1809.1	1809.7	1.1	9.0	4.0		
	1420	BOUL	3	1809.5	1810	1.5	2.0	1.0		
	2695	BOUL	3	1822.5	1824.5	2.5	4.0	1.0		
	208	VORO	6	2209	2211	3	98.0	48.0		
21	3750	TYKW	1	0127	0127.6	1.5	2.0	1.0		
	260	ONDR	5	0611	0611	.5	40.0			
	29	UPIC	45	0752	0752.5	2				
	23	POTS	45	0752.1	0752.4	1.4	12000.0	1500.0		
	221	ABST	3	0922.2	0922.8	1.1	82.0			
	260	ONDR	5	0937	0937	.5	50.0			
	29	UPIC	45	1006.5	1008	2.5				
	808	ONDR	45	1122.5	1123	2.5				
	2695	BOUL	8	1631	1631.5	1	9.0	2.0		
	113	POTS	45	1633.7	1633.8	.2	500.0	100.0		
	23	POTS	5	1633.8	1634	.8	6000.0	2000.0		
	2800	OTTA	20	1640	1706	110	4.8	2.4		
	2700	PENN	20	1653.6	1708	63.4	8.4	4.0		
	113	POTS	45	1634 U	1704 U	22 U	400.0	15.0		
	18	BOUL	6	1703	1709	7			3	
	18	MCMA	6	1703	1710	8			3	
	960	PENN	45	1703.8	1707.6	8.2	5.3	0.5		
	2695	SGMR	2	1704.7	1706.7	7.8	4.6	1.5		
	1415	SGMR	2	1704.5	1706.3	9.1	3.4	.9		

SOLAR RADIO EMISSION
OUTSTANDING OCCURRENCES

AUGUST 1972

AUG 1972	FREQUENCY	STATION	TYPE	STARTING TIME UT	TIME OF MAXIMUM UT	DURATION MINUTES	FLUX DENSITY 10^{-22} Wm^{-2} Hz^{-1} PEAK	FLUX DENSITY MEAN	INT	REMARKS
	606	SGMR	2	1704.4	1706.4	9	4.3	1.1		CONT
	410	SGMR	6	1704.5	1705.9	3.6	1.9	.5		CONT
	245	SGMR	6	1704.2	1706.2	10.2	39.0	4.5		CONT
	1420	CANR	8	1705	1706	2	6.0	2.0		
	23	POTS	45	1707	1707.9	3.4	3000.0	300.0		
	245	SGMR	6	2132.6	2133.9	2.8	6.2	3.0		
	606	SGMR	2	2133	2134	1.8	2.2	.7		
	410	SGMR	6	2133	2134	1.9	1.4	.5		
	3750	TYKW	1	2246	2249.3	6	4.0	2.0		
	2800	OTTA	1	2246	2248	4	3.0	2.0		
	2695	BOUL	45	2246.5	2247.5	4	4.0	1.0		
	2000	TYKW	45	2246	2249.2	4	11.0	4.0		
	1420	BOUL	45	2246.5	2250	9	26.0	7.0		
	1415	SGMR	46	2246.5	2249.3	3.9	27.0	6.0		
	1000	TYKW	45	2246	2249.2	4	31.0	9.0		
	606	SGMR	2	2246.6	2249.3	3.7	5.0	1.5		
	2800	OTTA	29	2250		12	1.6	0.8		
	208	VORO	6	2327.5	2328.2	1.3	212.0	28.0		
	245	SGMR	6	2327.9	2328.6	1.1	17.0	4.5		
	100	HIRA	6	2328	2328.4	1	75.0	40.0		
	410	SGMR	6	2328	2328.5	1	38.0	13.0		
22	100	HIRA	6	0006.5	0006.8	1.5	130.0	40.0		
	1500	BERL	46	1201	1207.7	180 U	202.0			
	2695	SGMR	20	1202	1214.3	89	22.5	10.0		
	960	PENN	45	1203.5	1214.6	23.4	30.5	4.3		
	2800	OTTA	21	1204	1240	180	20.0	9.6		
	2700	PENN	20	1205.2	1225.8	129	27.2	14.2		
	1415	SGMR	4	1205	1207.3	43.1	187.0	25.0		
	7000	SAOP	22	1206.8		88.5	33.0			
	2695	CANR	40	1206.5	1214	8	20.0	5.0		
	1420	CANR	40	1206.5	1208	16.5	204.0	28.0		
	9500	BERL	20	1207	1240	240 U	32.0			
	8800	SGMR	20	1207.1	1234.4	87.5	34.0	15.0		
	930	BORD	45	1207	1214.7	13	58.0	7.0		
	410	SGMR	6	1207.6	1214.2	14.7	12.9	6.0		
	245	SGMR	6	1207.8	1214.5	9.8	4.6	2.2		
	4995	SGMR	20	1208.4	1221.3	92.6	21.0	10.0		
	606	SGMR	3	1208.9	1214.6	10.8	133.0	55.0		
	2800	OTTA	2	1212	1214.5	3	6.2	3.1		
	536	ONDR	45	1213.5	1215	6.5	60.0			
	10700	PENN	20	1215.8	1234.4	69.6	25.8	12.9		
	9400	HUAN	20	1221.7	1233.2	47.4	29.6	13.1		
	237	TRST	42	1304.6	1306.2	3.6	240.0			
	225	HARS	45	1304.5	1306	4	80.0	25.0		
	2800	OTTA	1	1305	1307	4	2.4	1.2		
	2695	CANR	45	1305.5	1306.5	3	5.0	1.0		
	1420	CANR	45	1305	1307	5	2.0	1.0		
	113	POTS	45	1305	1306.3	4.2	1400.0	140.0		
	29	UPIC	45	1305	1306	5				
	23	POTS	45	1305.3	1307.6	4.2	50000.0	5000.0		
	234	POTS	45	1306.2	1306.2	.1	100.0	20.0		
	2800	OTTA	21	1635	1720	85	2.0	1.0		
	2800	OTTA	1	1714.8	1715.2	3	3.0	1.4		
	2700	PENN	1	1714.8	1715.4	3.2	5.3	1.8		
	2695	CANR	3	1714.5	1715	1.5	4.0	1.0		
	2695	BOUL	3	1715.5	1716	1.5	4.0	1.0		
	18	BOUL	6	1716	1719	4			1	
	18	MCMA	6	1718	1720	3			1	
	1415	SGMR	4	1818.4	1819.3	3.9	37.0	12.0		
	100	HIRA	6	2002	2002.4	1	30.0	10.0		
	410	SGMR	6	2244.4	2251.8	14.1	14.7	6.2		
	100	HIRA	6	2250.3	2251.5	2	250.0	100.0		
	245	SGMR	6	2250.2	2251.6	9	56.0	12.0		
	208	VORO	7	2251	2251.5	1.5	140.0	40.0		
	200	HIRA	6	2328	2328.5	1	110.0	50.0		
23	100	HIRA	6	0059	0059.1	2	95.0	15.0		
	100	HIRA	40	0140.5	0148.7	9.5	40.0			
	1420	CRON	3	0142	0146	13.5	5.0	2.0		
	225	HARS	45	0632.5	0633.5	2.5	85.0	30.0		
	100	GORK	6	0632.5	0633.8	2.3	100.0D			
	100	HIRA	6	0632.5	0634.2	2.2	130.0	30.0		
	237	TRST	41	0632.8	0633.9	1.9	210.0			
	23	POTS	5	0633.5	0633.7	.8	8000.0	2500.0		
	113	POTS	45	0634	0634.2	.4	700.0	70.0		
	100	HIRA	6	0657.9	0658.3	2	250.0	100.0		
	225	HARS	45	0658	0658.5	1.5	115.0	40.0		
	237	TRST	41	0658	0658.4	.8	190.0			
	200	HIRA	6	0658	0658.2	.8	130.0	40.0		
	113	POTS	45	0658	0658.3	1.1	4000.0	600.0		
	29	UPIC	45	0658	0658.5	2				
	23	POTS	45	0658	0658.4	2	55000.0	8000.0		
	234	POTS	5	0658.2	0658.2	.1	500.0	175.0		
	100	GORK	44	0806		7.8		5.0		
	113	POTS	45	0814 U	0820 U		70.0U			
	100	GORK	41	0814.5		14.8	100.0D			
	100	GORK		0814.5	0828.9		100.0D			
	100	HIRA	43	0814.5	0819	45.5D	160.0	20.0		
	210	IZMI	6	0816.1	0816.4	1.1	120.0	70.0		

SOLAR RADIO EMISSION
OUTSTANDING OCCURRENCES

AUGUST 1972

AUG 1972	FREQUENCY	STATION	TYPE	STARTING TIME UT	TIME OF MAXIMUM UT	DURATION MINUTES	FLUX DENSITY 10^{-22} Wm^{-2} Hz^{-1} PEAK	FLUX DENSITY 10^{-22} Wm^{-2} Hz^{-1} MEAN	INT	REMARKS
	200	GORK	6	0816.2	0816.6U	.7	200.0D			
	237	TRST	45	0816.4	0816.5	.2	220.0	55.0		
	4995	CANR	21	0930.5	0932	14	7.0	2.0		
	3100	CRIM	20	0930	0935	8				
	2695	CANR	45	0932.5	0936	4	6.0	2.0		
	1420	CANR	45	0933	0938	4	5.0	2.0		
	536	ONDR	5	1252	1252	1.5	60.0			
	29	UPIC	45	1255	1256	1.5				
	2800	OTTA	26	1310		60	2.4			
	2800	OTTA	20	1605	1700	145	2.4	1.2		
	2800	OTTA	21	1910	2105	250	3.4	2.0		
	4995	SGMR	3	1911.3	1913	9.8	104.0	26.0		
	4995	BOUL	8	1911	1913	9.5	87.0	36.0		
	2800	OTTA	3	1911.5	1913.1	6	96.0	19.2		
	2700	PENN	3	1911.4	1913.2	4.6	130.0	36.3		
	2695	BOUL	3	1911.5	1913.5	8.5	84.0	32.0		
	2695	SGMR	4	1911.6	1913.2	9.2	102.0	25.0		
	1420	BOUL	45	1911.5	1913	22.5	73.0	23.0		
	1415	SGMR	4	1911.5	1913.3	11.6	72.0	18.0		
	960	PENN	3	1911.4	1913.4	6.6	27.1	9.6		
	15400	SGMR	3	1912.6	1913	2.3	53.0	13.0		
	10700	PENN	3	1912.2	1913.1	2.1	60.3	10.6		
	9400	HUAN	45	1912.2	1913.1	2.6	90.5	33.6		
	8800	SGMR	3	1912.5	1913.2	10.8	97.0	24.0		
	606	SGMR	4	1912.3	1913.6	9.3	50.0	13.0		
	2700	PENN	29	1916	1916	104	9.5	4.7		
	960	PENN	29	1918	1918	102	2.5	1.3		
	2800	OTTA	1	2102	2103	3	1.4	0.7		
	208	VORO	7	2229.3	2233.5	5.5	90.0	16.0		
	245	SGMR	6	2229	2232.2	6.9	134.2	33.0		
	100	HIRA	6	2230.5U	2232.7	4.5D	200.0	110.0		
	410	SGMR	6	2230.7	2233.1	4.3	3.6	.9		
24	100	HIRA	6	0045	0045.5	1	75.0	15.0		
	100	HIRA	6	0344.5	0351.7	14.5	180.0	60.0		
	3750	TYKW	20	0345	0357	55	8.0	4.0		
	2000	TYKW	20	0345	0357	55	4.0	2.0		
	1000	TYKW	20	0345	0352	15	3.0	1.0		
	200	GORK	6	0345	0351.5	13.2	300.0D			
	200	HIRA	6	0345	0351.5	11	110.0	25.0		
	100	GORK	48	0345.1	0350.1	14.6	800.0			
	9400	TYKW	20	0350	0357	50	8.0	4.0		
	100	GORK	48	0500.2	0501.7	4.1	100.0D			
	100	HIRA	6	0500 U	0501.4	4	80.0	40.0		
	23	POTS	45	0500.9	0501	2.9	5000.0	300.0		
	29	UPIC	45	0835.5	0836.5	2.5				
	23	POTS	45	0836.1	0836.3	1.7	7000.0	1200.0		
	260	ONDR	45	0920	0922.5	3.5	30.0			
	237	TRST	41	1023.2	1023.6	1.1	62.0			
	23	POTS	45	1023.4	1024	1.4	6000.0	1000.0		
	260	ONDR	45	1023.5	1024	1	40.0			
	29	UPIC	45	1024	1024.5	1				
	536	ONDR	5	1436	1436	1	50.0			
	2800	OTTA	21	1510	1520	110	2.2	1.1		
	2695	CANR	45	1510	1516	11.5	6.0	1.0		
	1420	CANR	45	1511	1516	9.5	14.0	4.0		
	1420	BOUL	45	1513.5	1516.5	4.5	11.0	4.0		
	2800	OTTA	2	1515.6	1516	1	1.8	0.9		
	2695	SGMR	2	1515.2	1515.9	1.7	2.9	1.0		
	1415	SGMR	2	1515.7	1516.2	3.2	8.8	2.2		
	2695	BOUL	3	1516	1516.5	1.5	4.0	1.0		
	2800	OTTA	20	1715	1800	90	2.0	1.0		
	2695	CANR	8	1751.5	1752	1	7.0	2.0		
	2800	OTTA	24	1900		45	2.0			
	245	SGMR	6	2008.7	2009.2	3.6	14.0	3.5		
	100	HIRA	6	2009.5	2009.7	1.2	160.0	40.0		
	410	SGMR	6	2009.2	2009.5	1.3	3.8	1.0		
	4995	BOUL	3	2128.5	2132.5	7.5	40.0	13.0		
	2695	BOUL	3	2128	2133.5	17.5	141.0	38.0		
	1420	BOUL	45	2129	2133	15.5	290.0	85.0		
	245	SGMR	6	2129.2	2133.4	8.8	12.0	3.0		
	2800	OTTA	21	2130	2350	240	3.0	1.5		
	960	PENN	3	2130.4	2132.6	4	189.0	50.2		
	3750	TYKW	3	2131	2132.3	12	130.0	15.0		
	2800	OTTA	3	2131	2132.3	6	170.0	23.0		
	2700	PENN	3	2131	2132.3	4.2	153.0	36.6		
	2000	TYKW	45	2131	2132.4	12	175.0	25.0		
	1415	SGMR	45	2131.6	2132.4	9.9	395.0	99.0		
	1000	TYKW	45	2131	2132.5	4	240.0	70.0		
	606	SGMR	4	2131.1	2133	4.8	45.0	11.0		
	410	SGMR	6	2132	2133.2	8.7	9.4	2.4		
	960	PENN	29	2134.4	2134.4	31.2	13.1	6.5		
	2700	PENN	29	2135.2	2135.2	24.7	10.0	5.0		
	606	SGMR	29	2135.9	2135.9	16.6	7.4	3.7		
	2800	OTTA	29	2137		33	6.4	2.2		
	1415	SGMR	29	2141.5	2141.5	37.6	5.2	2.6		
25	4995	BOUL	3	0031	0033	2.5	5.0	2.0		
	2695	BOUL	3	0031.5	0033	2	5.0	2.0		
	1420	BOUL	3	0032	0033	2	3.0	1.0		

SOLAR RADIO EMISSION
OUTSTANDING OCCURRENCES

AUGUST 1972

AUG 1972	FREQUENCY	STATION	TYPE	STARTING TIME UT	TIME OF MAXIMUM UT	DURATION MINUTES	FLUX DENSITY 10^{-22} Wm^{-2} Hz^{-1} PEAK	FLUX DENSITY MEAN	INT	REMARKS
	100	GORK	6	0320.9	0321.1	.6	30.0	15.0		
	2695	CRON	4	0505.5	0508	45	14.0	4.0		
	1415	MANI	1	0505.8	0508.5	5.4	6.2	1.0		
	3750	TYKW	45	0506	0508.3	11	17.0	4.0		
	2695	MANI	4	0506	0508.4	4.7	17.7	4.1		
	2000	TYKW	45	0506	0508.4	11	9.0	2.0		
	1420	CRON	45	0506	0508.5	4	5.0	1.0		
	1000	TYKW	1	0506	0508	5	2.0	1.0		
	9400	TYKW	1	0507	0509	5	4.0	2.0		
	4995	CRON	45	0507	0508.5	4	8.0	2.0		
	2950	GORK	45	0507.2U	0508.8	4.4	31.0			
	2950	GORK		0507.2U	0509.4		21.0			
	2695	CRON	45	0511	0512.5	5	4.0	2.0		
	2950	GORK	45	0512.1	0512.9	4.7	7.5			
	2950	GORK		0512.1	0514.9		8.6			
	1420	CRON	3	0512	0512.5	2	3.0	1.0		
	260	ONDR	41	0530	1255	610	30.0			
	100	GORK	44	0915		150		5.0		
	245	SGMR	44	1006 E	2243	799 D	23.0			
	2950	GORK	4	1010.6U	1011.4	3.1	37.0	14.0		
	221	ABST	3	1030	1031.5	2.4	20.0			
	808	ONDR	45	1030	1035	10				
	9100	GORK	20	1031.2	1036	13	20.0	10.0		
	4995	CANR	45	1031.5	1034	7	26.0	9.0		
	1420	CANR	3	1031	1035	8.5	71.0	13.0		
	930	BORD	45	1031	1034.5	7	94.0	6.0		
	1500	BERL	4	1032 U	1034.5	150 U	52.0U			
	1420	ARCE	4	1032.7	1034.3	4.2				
	408	TRST	45	1033.1	1034.8	3.4	71.0	14.0		
	9285	ARCE	2	1033.3	1034.7	3.4				
	9500	BERL	20	1034 U	1034.8	55 U	7.1	3.7		
	950	GORK	4	1034.7	1034.7U	2.8	52.0			
	650	GORK	4	1034.3	1035	3.8	27.0			
	536	ONDR	5	1034	1034.5	2.5	40.0			
	2800	OTTA	21	1100 E	1245	160 D	8.6			
	4995	CANR	3	1230.5	1231.5	3	22.0	9.0		
	2700	PENN	3	1230.8	1232.5	20.9	30.1	4.7		
	2695	CANR	3	1230.5	1232.5	9.5	17.0	6.0		
	4995	SGMR	3	1231.2	1232	5.7	23.1	10.0		
	2950	GORK	3	1231.7	1232.9	5.6	10.0	4.0		
	2800	OTTA	3	1231	1232.5	5	16.6	5.6		
	2695	SGMR	3	1231.1	1232.5	8.7	17.1	8.3		
	1500	BERL	20	1231.5	1232.7	3.5	5.0			
	9500	BERL	20	1232	1240	30 U	7.4	3.7		
	7000	SAOP	3	1232	1232.4	1.3	20.8	10.4		
	9400	HUAN	20	1233.4	1240.4	22	10.9	4.6		
	2695	CANR	3	1243.5	1246.5	10	5.0	2.0		
	536	ONDR	5	1433.5	1433.5	1.5	65.0			
	200	HIRA	6	2342	2343.5	3	40.0	20.0		
	208	VORO	41	2343	2343.8	3	30.0			
26	100	HIRA	27	0339	0405	65	15.0	5.0		
	100	HIRA	6	0339.7	0341.5	5.5	180.0	45.0		
	500	HIRA	6	0339.5	0343.7	8	20.0	3.0		
	8800	MANI	4	0340.4	0341.3	7.1	16.3	4.7		
	4995	MANI	4	0340.4	0341.3	6.3	17.9	4.9		
	3750	TYKW	45	0340	0341.1	6	10.0	3.0		
	2695	MANI	4	0340.5	0343.6	7.1	14.0	2.8		
	2000	TYKW	3	0340	0343.8	10	13.0	3.0		
	1420	CRON	3	0340.5	0344	7.5	11.0	4.0		
	1415	MANI	3	0340.8	0343.7	7.9	10.0	3.0		
	1000	TYKW	45	0340	0343.7	10	6.0	2.0		
	200	GORK	48	0340.6	0341.6	4.5	300.0D			
	200	HIRA	6	0340	0341.2	5	460.0	60.0		
	100	GORK	41	0340.2	0342.3	14.9	1000.0			
	100	GORK		0340.2	0353.4		200.0			
	606	MANI	4	0340.3	0341.5	7.2	16.2	3.6		
	9100	GORK	1	0341.4	0341.6	.4	9.5	5.0		
	2950	GORK	4	0341.4	0343.8	4.9	13.4	4.5		
	2695	CRON	3	0341.5	0343	3.5	10.0	4.0		
	950	GORK	2	0341.3	0344.3	7	5.1	2.0		
	650	GORK	4	0341	0341.9	5	13.0			
	100	HIRA	6	0350.5	0353	4	120.0	40.0		
	100	GORK	24	0357	0405 U	24	70.0	30.0		
	113	POTS	45	0629.2	0629.7	.6	100.0	5.0		
	100	GORK	6	0629.7	0630.5	1.7	100.0D			
	100	GORK	41	0706.5	0707	3.9	40.0			
	100	GORK		0706.5	0709.5		40.0			
	2695	CANR	45	0915.5	0919.5	6	5.0	1.0		
	410	SGMR	44	1007 E	1037.8	796 D	4.7			
	245	SGMR	44	1007 E	1050.5	796 D	27.4			
	260	ONDR	41	1010	1047	50	40.0			
	2695	CANR	3	1049.5	1051	2.5	6.0	2.0		
	4995	CANR	45	1059	1059.5	2.5	8.0	3.0		
	4995	CANR	3	1159	1200	2.5	7.0	2.0		
	2800	OTTA	1	1159.5	1200.5	4.5	5.2	1.4		
	2700	PENN	3	1159	1200.6	6 D	10.5			
	2695	CANR	8	1159	1200.5	2.5	6.0	3.0		
	2695	SGMR	2	1159.9	1200.6	3.2	5.7	1.4		
	1420	CANR	3	1159.5	1200.5	2	5.0	2.0		

SOLAR RADIO EMISSION
OUTSTANDING OCCURRENCES

AUGUST 1972

AUG 1972	FREQUENCY	STATION	TYPE	STARTING TIME UT	TIME OF MAXIMUM UT	DURATION MINUTES	FLUX DENSITY 10^{22} Wm^{-2} Hz^{-1} PEAK	FLUX DENSITY 10^{22} Wm^{-2} Hz^{-1} MEAN	INT	REMARKS
	606	SGMR	1	1159.6	1201.1	3.5	4.3	1.1		
	245	SGMR	6	1159.6	1200.8	4.2	16.0	4.0		
	237	TRST	41	1159.8	1200.1	1.5	73.0			
	1415	SGMR	1	1200.2	1201	6.8	1.9	1.0		
	225	HARS	45	1200.5	1201	2	35.0	10.0		
	113	POTS	45	1200.1	1200.5U		350.0U			
	29	UPIC	45	1200	1200.5	2				
	23	POTS	45	1200	1200.3	2.1	5000.0	1000.0		
	2800	OTTA	20	1500	1840	320	4.0	2.2		
	2700	PENN	20	1813.6	1859.8	119	11.2	6.1		
	2695	PENT	21	2115	2245	280 D	8.2			
	208	VORO	7	2200	2201	1.5	200.0	80.0		
	208	VORO	6	2202.4	2203	.8	160.0	30.0		
	9400	TYKW	45	2254	2300.3	30	40.0	10.0		
	2695	BOUL	3	2258.5	2301	5	28.0	9.0		
	100	HIRA	6	2258	2301 U	12	90.0U	15.0U		
	606	SGMR	40	2258.9	2259.2	6.6	4.3	2.0		
	8800	MANI	4	2259.4	2300.4	2.4	41.0	9.6		
	4995	MANI	4	2259.4	2300.4	3.4	37.2	12.4		
	4995	BOUL	8	2259	2300	4	38.0	14.0		
	3750	TYKW	45	2259	2300.3	10	45.0	7.0		
	2695	PENT	3	2259	2300	2.5	40.0	13.4		
	2695	MANI	3	2259.4	2300.3	3.4	43.2	14.4		
	2000	TYKW	3	2259.5	2300.5	4	17.0	6.0		
	1415	MANI	1	2259.7	2301	2.1	5.2	1.0		
	1000	TYKW	1	2259	2300.4	5	4.0	1.0		
	606	MANI	40	2259.1	2300.4	2.6	6.8	1.4		
	410	SGMR	6	2259.1	2300.6	7.2	4.7	2.0		
	1420	BOUL	45	2300	2301.5	2.5	7.0	3.0		
	245	SGMR	6	2300.3	2300.8	5	57.4	16.0		
	2695	PENT	29	2301.5		8	5.4	2.7		
	200	HIRA	6	2302.2	2302.8	1	280.0	90.0		
27	2695	PENT	1	0018.5	0018.7	1	3.6	1.8		
	2000	TYKW	1	0018.5	0019	1.5	3.0	1.0		
	1420	BOUL	8	0019	0019.5	1	4.0	2.0		
	29	UPIC	45	0443	0447	4				
	100	HIRA	6	0609.5	0610.6	2	120.0	15.0		
	100	GORK	41	0610.2	0610.7	2.6	50.0			
	100	GORK		0610.2	0611.4		100.0D			
	100	HIRA	6	0636.5	0637	1	30.0	10.0		
	100	GORK	6	0637.1	0637.5	1.1	80.0			
	237	TRST	41	0744.1	0745	1.5	44.0			
	930	BORD	45	0811	0812	2	11.0	2.0		
	260	ONDR	45	0811	0812.5	2.5	95.0			
	237	TRST	41	0811.7	0812.1	.6	500.0			
	650	GORK	4	0812	0812.6	1.5	20.0			
	536	ONDR	45	0812	0812.5	3	65.0			
	100	HIRA	6	0852.5	0853.1	1	70.0	10.0		
	100	GORK	6	0853.3	0853.8	1	100.0D			
	29	UPIC	45	0924	0924.5	1				
	100	GORK	6	0925	0925.4	.6	80.0D			
	221	ABST	3	0932.8	0933.5	1	9.0			
	260	ONDR	45	0952	0952	1	30.0			
	237	TRST	45	0952.5	0952.6	.4	83.0	20.0		
	245	SGMR	44	1007 E		794 D				
	29	UPIC	45	1016.5		33.5				
	113	POTS	41	1020.4	1027.5	14.2	250.0	2.0		
	23	POTS	41	1020.8	1021.3	7.5	50000.0	4000.0		
	930	BORD	5	1021	1021.1	1	21.0	2.0		
	237	TRST	41	1027.2	1028.7	1.5	82.0			
	23	POTS	5	1048.5	1048.9	1.8	27000.0	9000.0		
	4995	BOUL	3	1404.5	1405.5	2	10.0	4.0		
	4995	BOUL	45	1633.5	1634.5	4	18.0	4.0		
	2800	OTTA	21	1756	1805	20	2.0	1.0		
	7000	SAOP	20	1758.3		18	6.5			
	2800	OTTA	8	1802.5	1805.7	3.5	3.4			
	2695	CANR	45	1803.5	1806	2.5	9.0	3.0		
	1420	CANR	45	1804	1806	2	9.0	2.0		
	1415	SGMR	2	1804.4	1805.7	5.7	6.8	1.7		
	930	BORD	45	1804	1805.7	3	29.0	3.0		
	606	SGMR	4	1804.5	1805.7	4.2	15.0	5.0		
	410	SGMR	6	1804.3	1805.4	6.8	47.0	8.0		
	245	SGMR	6	1804.3	1805.4	1.6	72.0	14.0		
	2800	OTTA	21	2030	2040	20	1.8	0.9		
	2800	OTTA	1	2036.5	2036.7	1	1.2	0.6		
	18	BOUL	41	2105	2111	9			1	
	18	MCMA	6	2109	2110	3			1	
	2800	OTTA	1	2150	2151.5	3	2.0	1.0		
	100	HIRA	6	2239.5	2240.7	2	50.0	10.0		
	100	HIRA	6	2248	2251.3	5	200.0	25.0		
	606	MANI	4	2324.2	2335.3	25.1	29.4	3.0		
	1420	BOUL	45	2327	2335.5	23.5	95.0	29.0		
	8800	MANI	4	2328.8	2334.7	40.3	415.0	46.6		
	4995	CRON	45	2328	2335	30.5	195.0	43.0		
	2695	MANI	4	2328.5	2334.4	18.7	185.0	56.0		
	1415	MANI	4	2328.5	2334.4	29.9	102.0	15.8		
	4995	MANI	4	2329	2334.6	18.2	285.0	84.0		
	4995	BOUL	45	2329.5	2335.5	45	182.0	38.0		
	2695	BOUL	45	2329.5	2335	30	144.0	28.0		

SOLAR RADIO EMISSION
OUTSTANDING OCCURRENCES

AUGUST 1972

AUG 1972	FREQUENCY	STATION	TYPE	STARTING TIME UT	TIME OF MAXIMUM UT	DURATION MINUTES	FLUX DENSITY 10^{-22} Wm^{-2} Hz^{-1} PEAK	FLUX DENSITY 10^{-22} Wm^{-2} Hz^{-1} MEAN	INT	REMARKS
	3750	TYKW	45	2330	2334.7	30	175.0	35.0		
	2695	CRON	45	2330	2334.5	20	119.0	45.0		
	2000	TYKW	45	2330	2334.4	30	111.0	18.0		
	1420	CRON	3	2330.5	2335	17.5	90.0	34.0		
	1000	TYKW	45	2330	2334.6	30	71.0	9.0		
	2695	PENT	45	2331	2334.5	21	187.0	41.0		
	2800	OTTA	45	2331	2334.5	10	187.0			
	2800	OTTA	45	2341	2343.5	11	73.0			
	9500	HIRA	5	2333	2334.5	6				
	9400	TYKW	45	2333	2334.7	27	300.0	60.0		
	208	VORO	41	2333.8	2334.2	37.2	36.0			
	500	HIRA	6	2333.5	2333.6	4	10.0	5.0		
	100	HIRA	6	2334	2337.4	16.5	200.0	25.0		
	9500	HIRA	29	2339	2343.5	14				
	4995	MANI	29	2347.2	2347.2	48.5	53.0	16.7		
	2695	MANI	29	2347.2	2347.2	50.3	29.4	2.8		
	2695	PENT	30	2352		55	6.5	1.8		
	2695	PENT	1	2353	2353.5	2.5	5.8	2.9		
	1420	BOUL	3	2353.5	2354.5	3	4.0	1.0		
	9400	TYKW	29	2400		100	14.0	7.0		
	3750	TYKW	29	2400		100	5.0	3.0		
28	3750	TYKW	1	0105	0105.9	2	4.0	1.0		
	2695	MANI	1	0105.1	0105.7	1.4	2.8	1.4		
	2000	TYKW	1	0105	0105.9	2	7.0	2.0		
	1420	CRON	8	0105.5	0106	1.5	21.0	8.0		
	1415	MANI	4	0105.2	0105.6	1.8	25.2	9.5		
	1000	TYKW	3	0105	0105.8	2	20.0	3.0		
	606	MANI	3	0105.2	0105.7	2.1	6.6	2.4		
	200	HIRA	6	0247	0248	2	100.0	25.0		
	100	HIRA	6	0247.5	0248.4	2	150.0	30.0		
	606	MANI	2	0247.2	0248.3	2.8	3.5	1.2		
	3750	TYKW	1	0316	0317	3	2.0	1.0		
	9100	GORK	20	0329.4	0405	56.4	35.0	12.5		
	3750	TYKW	20	0420	0428	30	3.0	1.0		
	2000	TYKW	1	0423	0424.5	3	3.0	1.0		
	1420	CRON	3	0423.5	0425	2	10.0	4.0		
	1000	TYKW	1	0424	0424.7	1.5	3.0	1.0		
	100	GORK	6	0529	0529.1	.4	29.0	10.0		
	100	GORK	6	0533.6	0533.8	.7	45.0	20.0		
	113	POTS	5	0541.2	0541.3	.1	130.0	30.0		
	100	GORK	6	0542	0542.1	.3	45.0	20.0		
	100	HIRA	6	0545.5	0546.7	2.5	100.0	15.0		
	100	GORK	48	0546.4	0547.6	1.8	50.0D			
	100	GORK	6	0559.6	0559.7	.5	30.0	15.0		
	100	GORK	6	0609.3	0609.8	.9	50.0	25.0		
	100	HIRA	6	0644.5	0648	9.5	230.0	30.0		
	200	HIRA	6	0646.8	0647.5	2	180.0	30.0		
	237	TRST	42	0647	0647.1	3	52.0			
	208	VORO	41	0647	0647.5	6.8	66.0			
	113	POTS	45	0647.2	0647.7	1.4	1400.0	280.0		
	100	GORK	41	0647.5	0648.9U	7.7	50.0D			
	100	GORK		0647.5	0653.4		50.0			
	100	HIRA	27	0656	0710	48	20.0	5.0		
	100	GORK	24	0657	0710.5	35	50.0			
	9400	SLOU	40	0731	0731.2	4	26.0			
	9100	GORK	4	0731.3	0734.2	4.6	24.0	12.0		
	100	GORK	44	0732		148 D		5.0		
	23	POTS	45	0758.1	0758.7	1.5	15000.0	3000.0		
	606	MANI	3	0856.5	0859.5	8	18.3	5.9		
	2695	CRON	8	0858.5	0900	3	10.0	3.0		
	2695	CANR	8	0858.5	0900	2.5	12.0	4.0		
	113	POTS	41	0858.5	0900	5.6	550.0	25.0		
	100	HIRA	6	0858	0859.9U	3.5	180.0U	40.0U		
	29	UPIC	45	0858		4.5				
	23	POTS	45	0858.3	0859.9	3.8	20000.0	1500.0		
	100	GORK	41	0859		6.6	50.0D			
	100	GORK		0859	0904.8		800.0			
	200	GORK	41	0900.5	0900.7	4.8	110.0			
	200	GORK		0900.5	0904.5		180.0			
	650	GORK	1	0900.7	0901.1	.4	3.8	1.9		
	2950	GORK	3	0902	0909	1	9.0			
	100	HIRA	6	0902.5	0903.6U	2	70.0	15.0		
	2695	CANR	8	0935.5	0936	1.5	14.0	6.0		
	113	POTS	45	0935.8	0936.3	1.2	10000.0	1500.0		
	23	POTS	5	0935.8	0936.5	2.8	500000.0U	1500.0U		
	260	ONDR	45	0935	0936	5	90.0			
	2950	GORK	3	0936.9	0937.1	.5	13.0	150.0		
	237	TRST	41	0936	0936.2	.7	770.0			
	200	GORK	6	0936.8	0937.1	.9	300.0	150.0		
	100	GORK	6	0936.5		2.3	50.0D			
	29	UPIC	45	0936		3				
	234	POTS	45	0936.2	0936.2	.1	900.0	220.0		
	650	GORK	1	0937	0937.1	.3	1.3	0.6		
	2800	OTTA	4	1059	1100.7	3	11.8	4.0		
	113	POTS	45	1116.8	1117.1	.4	140.0	7.0		
	606	SGMR	1	1116.1	1116.7	3.1	3.6	1.8		
	410	SGMR	6	1116.2	1116.9	3	6.1	3.0		
	245	SGMR	6	1116	1116.6	5	17.6	5.0		
	4995	CANR	3	1122.5	1123.5	3	9.0	3.0		

SOLAR RADIO EMISSION
OUTSTANDING OCCURRENCES

AUGUST 1972

AUG 1972	FREQUENCY	STATION	TYPE	STARTING TIME UT	TIME OF MAXIMUM UT	DURATION MINUTES	FLUX DENSITY 10^{-22} Wm^{-2} Hz^{-1} PEAK	FLUX DENSITY 10^{-22} Wm^{-2} Hz^{-1} MEAN	INT	REMARKS
28	9285	ARCE	2	1123	1123.5	2				
	2800	OTTA	21	1125	1205	75	2.6	1.3		
	260	ONDR	45	1127	1130.5	5	80.0			
	9500	BERL	3	1128.5	1130.7	18	30.0	5.4		
	4995	CANR	3	1128.5	1130	3	19.0	9.0		
	2695	CANR	45	1128.5	1131	3.5	12.0	4.0		
	1420	ARCE	21	1128.9	1129.5	6.5				
	1420	CANR	45	1128	1131	7	76.0	31.0		
	210	IZMI	41	1128.5	1130.4	3.5	170.0			
	29	UPIC	45	1128.5		13.5				
	930	BORD	45	1128	1130.5	4	42.0	3.0		
	408	TRST	41	1128.5	1130.6	3.4	140.0D			
	237	TRST	41	1128.6	1129.5	2.7	270.0			
	237	TRST		1128.6	1130.7		160.0			
	606	SGMR	4	1128.6	1130.6	4.8	175.0	20.0		
	410	SGMR	6	1128.5	1130.7	11.3	115.0	20.0		
	245	SGMR	6	1128.4	1130.7	12.6	93.0	18.0		
	10700	PENN	3	1129.6	1131	3	23.6	6.7		
	9285	ARCE	3	1129.2	1130.6	6.5				
	8800	SGMR	3	1129.7	1131	2.7	20.4	8.0		
	4995	SGMR	3	1129.8	1130.8	6.1	19.4	8.0		
	2700	PENN	45	1129.2	1130.8	4.8	25.5	4.7		
	2695	SGMR	3	1129.7	1130.8	5.9	12.9	6.0		
	1415	SGMR	3	1129	1130.7	10.5	61.0	12.0		
	113	POTS	41	1129	1140.5	12.3	5500.0	140.0		
	23	POTS	41	1129.1	1131	13.5	250000.0	7000.0		
	960	PENN	45	1129	1130.7	3.7	13.4	1.6		
	15400	SGMR	3	1130	1130.6	1.4	14.6	7.0		
	9400	SLOU	4	1130	1131	2	25.0			
	9400	HUAN	3	1130.3	1130.9	2	50.2	20.0		
	9100	GORK	1	1130.4	1131.8	2	24.0	8.5		
	1420	ARCE	8	1130.2	1130.4	.9				
	536	ONDR	45	1130	1131	2	195.0			
	237	TRST	41	1140.4	1140.4	.4	54.0			
	930	BORD	5	1145	1145.2	1	14.0	1.0		
	100	GORK	44	1200 E		60 D		10.0		
	29	UPIC	45	1205.5	1206	1				
	23	POTS	5	1205.9	1206.2	1.2	25000.0	8000.0		
	23	POTS	5	1226.8	1227.1	1.1	5000.0	1500.0		
	29	UPIC	45	1238.5	1239	1.5				
	23	POTS	45	1238.6	1238.9	1.9	12000.0	1500.0		
	29	UPIC	45	1302	1305	6				
	4995	BOUL	3	1320	1321	2.5	12.0	4.0		
	7000	SAOP	28	1401.5		3.1				
	9285	ARCE	40	1402.9	1405.3	4.3				
	2695	BOUL	21	1402	1406	22.5	7.0	2.0		
	9400	HUAN	3	1404.7	1405.4	2.6	20.4	6.5		
	7000	SAOP	4	1404.6	1405.8	1.8	18.3	7.5		
	10700	PENN	3	1405.2	1405.9	1.6	12.0	3.5		
	9500	BERL	3	1405.2	1405.6	19	16.0	3.0		
	9400	SLOU	3	1405	1406	1.5	16.0			
	7000	SAOP	29	1406.4		2.6				
	9285	ARCE	2	1429.7	1430.1	.6				
	1420	ARCE	1	1429.8	1430	.6				
	23	POTS	45	1432.2	1433	1.7	3000.0	300.0		
	245	SGMR	6	1456.8	1502.1	6.5	39.0	10.0		
	410	SGMR	6	1459.2	1502.1	4.2	63.0	13.0		
	23	POTS	45	1500.6	1502.2	4.1	6000.0	600.0		
	930	BORD	45	1500	1502.1	3	19.0	3.0		
	237	TRST	41	1500.6	1502.1	2	100.0			
	245	SGMR	43	1505 U		494 D				
	2800	OTTA	21	1625	1710	90	2.0	1.0		
	4995	CANR	45	1632.5	1634	6.5	14.0	3.0		
	2695	SGMR	22	1632.2	1634.7	15.9	4.6	1.2		
	9500	BERL	46	1633.5	1634.6	7.5	36.0	5.7		
	9400	HUAN	4	1633.7	1634.8	27.8	53.9	9.6		
	9285	ARCE	45	1633.8	1634.4	4.7				
	7000	SAOP	45	1633.4	1634.8	5.1	31.8			
	2700	PENN	1	1633.6	1634.8	4.8	9.5	1.8		
	15400	SGMR	4	1634	1634.6	16.3	26.0	5.2		
	10700	PENN		1634	1634.8	5	41.9	5.3		
	9400	SLOU	45	1634	1634.9	5	48.0			
	8800	SGMR	4	1634	1634.7	16	43.0	8.3		
	4995	SGMR	2	1634 U	1634.8	8 U	20.0	5.0		
	2800	OTTA	1	1634	1634.7	1	2.6	1.3		
	1420	ARCE	1	1634	1634.4	.7				
	9285	ARCE	29	1638.5		13 U				
	18	BOUL	6	1638	1640	3			1	
	18	MCMA	41	1638	1640	6			1	
	4995	BOUL	8	1654	1655	1.5	14.0	5.0		
	113	POTS	45	1658.2	1658.4	.3	500.0	35.0		
	23	POTS	5	1658.2	1658.5	.7	2000.0	700.0		
	2800	OTTA	23	1800	2020	330	5.8	2.9		
	2695	BOUL	21	1821.5	1826.5	20	5.0	2.0		
	18	BOUL	6	1822	1825	4			1	
	18	MCMA	6	1822	1825	4			1	
	2700	PENN	1	1823.8	1826	3.8	5.6	2.0		
	2800	OTTA	1	1824	1826	5	2.4	1.0		
	18	MCMA	41	1455	1503	9			1	
	18	BOUL	41	2015	2033	19			2	

SOLAR RADIO EMISSION
OUTSTANDING OCCURRENCES

AUGUST 1972

AUG 1972	FREQUENCY STATION	TYPE	STARTING TIME UT	TIME OF MAXIMUM UT	DURATION MINUTES	FLUX DENSITY 10^{-22} Wm^{-2} Hz^{-1} PEAK	FLUX DENSITY MEAN	INT	REMARKS
	18 MCMA	41	2023	2031	11			2	
	2800 OTTA	1	2029	2032	7	3.8	1.7		
	410 SGMR	6	2029.6	2031.9	8.7	225.0	45.0		
	245 SGMR	48	2029.3	2031.9	16.9	680.0	135.0		
	2700 PENN	3	2030.5	2031.9	4	13.6	2.3		
	2695 BOUL	45	2030.5	2032	2	5.0	1.0		
	1415 SGMR	47	2030.6	2031.9	4.9	940.0	160.0		
	100 HIRA	6	2030.5	2032	4.5	230.0	50.0		
	960 PENN	45	2030.8	2031.9	3.7	37.7	2.5		
	606 SGMR	4	2030.9	2031.9	5.7	86.0	15.0		
	10700 PENN	1	2031.6	2031.9	.7	8.5	3.5		
	200 HIRA	6	2031	2031.5	1.5	1070.0	200.0		
	500 HIRA	6	2031	2032	1.5	60.0	5.0		
	1420 BOUL	45	2130.5	2133.5	4.5	22.0	4.0		
	100 HIRA	6	2242.8	2243.2	1	170.0	70.0		
29	100 HIRA	6	0052	0052.5	1.5	115.0	50.0		
	200 HIRA	6	0122.2	0122.8	.8	160.0	50.0		
	100 HIRA	6	0224.7	0225	1.3	60.0	20.0		
	4995 CRON	8	0240.5	0241.5	1.5	11.0	4.0		
	2695 CRON	8	0240.5	0241.5	1.5	12.0	5.0		
	208 VORO	48	0240.5	0241.5	2	200.0	52.0		
	200 HIRA	6	0240	0241.8	2.7	300.0	60.0		
	100 HIRA	6	0240	0241.6	3	220.0	100.0		
	9400 TYKW	1	0241	0241.8	2	4.0	2.0		
	8800 MANI	3	0241.2	0242	1.5	12.2	2.4		
	4995 MANI	1	0241.2	0241.9	2.2	9.2	1.8		
	3750 TYKW	1	0241	0241.8	2	8.0	2.0		
	2695 MANI	1	0241.4	0241.7	2	9.1	2.6		
	2000 TYKW	1	0241	0241.8	2	9.0	3.0		
	1420 CRON	8	0241	0242	1.5	16.0	7.0		
	1415 MANI	4	0241.4	0241.6	1.1	16.2	8.6		
	1000 TYKW	3	0241	0241.7	2	35.0	5.0		
	606 MANI	4	0241.3	0241.7	1.9	54.0	19.2		
	500 HIRA	6	0241.3	0242	1	85.0	30.0		
	200 GORK	44	0300		270		5.0		
	208 VORO	44	0345	0438.2	170	96.0			
	200 GORK	6	0411	0411.3	.9	80.0	40.0		
	113 POTS	5	0517.6	0517.6	.1	2000.0	700.0		
	100 GORK	41	0525.7	0526	6.5	25.0			
	100 GORK		0525.7	0528.9		50.0D			
	100 GORK		0525.7	0530.4		50.0			
	200 GORK	6	0528	0528.6	1.9	120.0	60.0		
	100 HIRA	6	0528.5	0528.6	1	70.0	20.0		
	23 POTS	41	0528.7	0528.8	2.2	1200.0	120.0		
	100 GORK	44	0533		129		5.0		
	200 GORK	6	0539	0539.4	.9	100.0	50.0		
	200 GORK	6	0544.3	0544.4	.2	120.0	60.0		
	260 ONDR	41	0550		590	75.0D			
	100 GORK	41	0552.3	0552.4	8.8	50.0			
	100 GORK		0552.3	0555.2		50.0D			
	100 GORK		0552.3	0559.5		50.0			
	100 HIRA	6	0554.5	0555	1.8	100.0	30.0		
	23 POTS	45	0554.8	0555.2	1.5	7000.0	700.0		
	113 POTS	45	0601.4	0601.6	.4	1750	35.0		
	100 HIRA	6	0601.3	0601.5	1.5	240.0	60.0		
	100 GORK	41	0609.8	0610	4	50.0			
	100 GORK		0609.8	0613.1		50.0D			
	200 GORK	41	0610.8	0611.8	2.6	50.0			
	200 GORK		0610.8	0619		80.0			
	100 GORK	6	0712	0712.6	1.4	50.0			
	2695 CANR	3	0720.5	0723.5	4	7.0	3.0		
	2695 CANR	3	0742	0743.5	2.5	8.0	3.0		
	1420 CANR	3	0742.5	0744	3	6.0	2.0		
	1420 CANR	3	0756.5	0758	3	6.0	2.0		
	1500 BERL	22	0804	0811	26	6.6	1.6		
	4995 CRON	3	0806.5	0811	9	78.0	31.0		
	606 MANI	22	0806	0816.4	11.4	9.0	2.4		
	9500 BERL	4	0807.7	0810.8	27	100.0	38.0		
	4995 MANI	4	0807.4	0811.4	10	104.0	29.3		
	4995 CANR	8	0807.5	0810.5	5	56.0	22.0		
	3100 CRIM	3	0807	0810	8	20.0	6.0		
	2950 GORK	3	0807.2	0810.9	6.8	30.0	10.0		
	2695 CRON	3	0807.5	0810.5	5.5	22.0	10.0		
	930 BORD	45	0807	0809.6	5	22.0	3.0		
	650 GORK	40	0807.9	0809.7	9.4	5.0			
	9285 ARCE	4	0808.9	0811.1	7.5				
	2695 CANR	3	0808	0811.5	6	42.0	19.0		
	2695 MANI	4	0808.8	0810.8	5.4	23.4	7.8		
	1415 MANI	1	0808.5	0810.8	6	7.6	2.2		
	950 GORK	45	0808	0808.7	4.5	10.8			
	950 GORK		0808	0809.5		12.0			
	19000 SLOU	4	0809.5	0811.5	3	35.0			
	9400 SLOU	4	0809	0811.5	6	111.0			
	9100 GORK	3	0809.4E	0811.3	2.6	115.0			
	8800 MANI	4	0809	0811.4	17.3	153.0	51.0		
	1420 CANR	45	0809	0811	3	7.0	2.0		
	1420 CRON	45	0809	0811.5	9.5	7.0	2.0		
	9100 GORK	29	0812	0812	5.8	45.0	10.0		
	200 GORK	41	0812.8	0813	4	25.0			

SOLAR RADIO EMISSION
OUTSTANDING OCCURRENCES

AUGUST 1972

AUG 1972	FREQUENCY	STATION	TYPE	STARTING TIME UT	TIME OF MAXIMUM UT	DURATION MINUTES	FLUX DENSITY 10^{-22} Wm^{-2} Hz^{-1} PEAK	FLUX DENSITY MEAN	INT	REMARKS
	200	GORK		0812.8	0815.6		20.0			
	100	GORK	48	0814.5	0816.6	4.9	1000.0			
	100	HIRA	6	0814	0816.3	6	180.0	60.0		
	237	TRST	42	0815.5	0815.6	1	520.0			
	113	POTS	45	0815.9	0817.1	2.2	200.0	50.0		
	234	POTS	45	0816.6	0816.7	.1	350.0	90.0		
	113	POTS	5	0943.1	0943.2	.1	100.0	30.0		
	237	TRST	41	1009.9	1010	.5	830.0			
	210	IZMI	6	1010	1010.1	.5	450.0	200.0		
	200	GORK	6	1010	1010.3	.5	300.0	150.0		
	245	SGMR	44	1010 E	1248.4	788 D	33.2			
	234	POTS	45	1010.1	1010.2	.2	350.0	90.0		
	200	GORK	44	1036.2	1036.3	1.6	350.0			
	200	GORK		1036.2	1037.3		300.0			
	23	POTS	45	1042.3	1042.4	1	2000.0	500.0		
	200	GORK	6	1044.3	1044.5	.6	350.0	170.0		
	237	TRST	5	1120.1	1120.2	.1	45.0	14.0		
	113	POTS	45	1150	1150.2	2.6	200.0	35.0		
	100	GORK	48	1150		4.3	50.0D			
	237	TRST	42	1236.1	1237.2	1.4	59.0			
	113	POTS	41	1236.2	1237.3	8.3	800.0	15.0		
	100	GORK	44	1236	1236.4	2.3	50.0D			
	100	GORK		1236	1237.6U		50.0D			
	2800	OTTA	21	1240	1332	430	14.2	4.0		
	237	TRST	42	1243.3	1244.4	5.3	130.0			
	100	GORK	41	1243.4	1243.5	7.3	25.0			
	100	GORK		1243.4	1244.7		70.0			
	100	GORK		1243.4	1246.7		50.0			
	100	GORK		1243.4	1248.6		50.0			
	410	SGMR	6	1244.2	1244.4	.5	15.0	4.0		
	245	SGMR	6	1244.2	1244.5	.7	98.0	25.0		
	23	POTS	41	1246.6	1250	4.2	18000.0	1000.0		
	237	TRST	42	1259	1300	3.7	120.0			
	1420	CANR	3	1315.5	1319	10	7.0	3.0		
	9400	HUAN	20	1316.1	1326.1	46.3	9.5	3.7		
	4995	CANR	21	1316	1318	20.5	10.0	8.0		
	2695	CANR	3	1316.5	1318.5	32.5	32.0	12.0		
	1500	BERL	20	1316.5	1319	34	7.5	2.0		
	9500	BERL	20	1317	1320.8	53	8.5	3.8		
	8800	SGMR	20	1317.5	1320.2	14.5	10.0	2.5		
	7000	SAOP	22	1317.3		38.8	12.6			
	4995	SGMR	20	1317.4	1318.2	23.1	13.0	3.2		
	2800	OTTA	3	1317	1318.5	12	19.4	9.0		
	2695	SGMR	20	1317.2	1319	24.8	21.0	7.0		
	1415	SGMR	20	1317.2	1319.1	12.8	5.9	1.5		
	606	SGMR	1	1317.3	1320.1	6.2	2.2	.6		
	410	SGMR	1	1317.3	1319.3	7.7	1.9	.5		
	18	MCMA	6	1343	1345	4			1	
	113	POTS	45	1344.1	1344.5	1.6	200.0	10.0		
	29	UPIC	45	1344	1344.5	4				
	23	POTS	45	1344.1	1344.2	4.7	10000.0	1200.0		
	23	POTS	45	1351.9	1352.2	.8	3000.0	750.0		
	23	POTS	45	1619.4	1620.4	1.3	5000.0	500.0		
	7000	SAOP	3	1653	1653.5	1.5	14.2	4.0		
	2695	CANR	8	1653	1655	3	11.0	4.0		
	18	BOUL	6	1653	1654	2			1	
	18	MCMA	6	1653	1655	4			1	
	10700	PENN	3	1654.7	1655.1	2.5	18.0	4.6		
	4995	CANR	8	1654	1654.5	2.5	12.0	4.0		
	2800	OTTA	3	1654	1655	2	12.8	3.2		
	2700	PENN	3	1654.4	1655.1	2.2	18.5	6.6		
	1420	CANR	8	1654.5	1655.5	3.5	7.0	2.0		
	1420	BOUL	8	1654.5	1655.5	2.5	6.0	2.0		
	1415	SGMR	1	1654.5	1655.1	3	2.9	.7		
	960	PENN	1	1654.6	1655	1.6	3.0	0.7		
	113	POTS	45	1655	1655	.5	100.0	6.0		
	29	UPIC	45	1655	1656	1.5				
	23	POTS	45	1655	1655.3	2.2	25000.0	8000.0		
	18	BOUL	41	1736	1738	7			1	
	18	MCMA	41	1736	1738	7			1	
	1420	BOUL	45	1754.5	1756	1.5	3.0	1.0		
	2800	OTTA	8	1834.5	1834.7	.5	2.4			
	2800	OTTA	21	2040	2325	260	8.0	4.0		
	2800	OTTA	2	2114.5	2115.5	4	5.2	2.6		
	200	HIRA	6	2116.2	2116.6	1	120.0	40.0		
	100	HIRA	6	2116	2116.5	1.6	140.0	30.0		
	245	SGMR	6	2116	2116.5	1.5	141.0	35.3		
	606	SGMR	40	2217.7	2227.4	24.9	78.0	19.0		
	500	HIRA	6	2225	2228.8	11	40.0	10.0		
	410	SGMR	6	2310.4	2311.2	7.6D	43.0	11.0		
	245	SGMR	48	2310.4	2310.5	7.6D	880.0	220.0		
30	2695	CRON	3	0058.5	0059	2	4.0	2.0		
	100	HIRA	6	0137.8	0140	2.8	100.0	40.0		
	100	HIRA	6	0143	0143.6	2	80.0	40.0		
	100	HIRA	6	0259.5	0259.7U	.5D	120.0U	70.0U		
	100	GORK	6	0431.8	0432.3	1	60.0D			
	100	HIRA	6	0431.5	0432	1	120.0	25.0		
	100	GORK	44	0433		87		5.0		

SOLAR RADIO EMISSION
OUTSTANDING OCCURRENCES

AUGUST 1972

AUG. 1972	FREQUENCY	STATION	TYPE	STARTING TIME UT	TIME OF MAXIMUM UT	DURATION MINUTES	FLUX DENSITY 10^{-22} Wm^{-2} Hz^{-1} PEAK	FLUX DENSITY MEAN	INT	REMARKS
30	100	GORK	6	0506.4	0507.5	2.1	50.0	25.0		
	2950	GORK	21	0649.9	0655.4	14.1	9.3	4.6		
	2695	CRON	45	0649	0652.6	11	15.0	6.0		
	2695	CRON	45	0649	0653.5	11	15.0	6.0		
	2695	MANI	1	0649.7	0652.9	6.4	6.6	2.6		
	1415	MANI	2	0649.6	0652.2	5.6	8.0	2.3		
	606	MANI	4	0649.9	0652.6	10.6	10.5	2.5		
	4995	CRON	45	0650.5	0652.5	10.5	24.0	8.0		
	1500	BERL	4	0650.4	0652.5	4.6	8.6	3.2		
	1420	CRON	3	0650	0652	10	10.0	4.0		
	650	GORK	3	0650.5	0652.9	4.3	9.6	4.6		
	9500	BERL	3	0651	0653	14	39.0	7.2		
	9400	TYKW	3	0651	0652.9	8	45.0	15.0		
	9400	SLOU	3	0651.2	0653	5	46.0			
	9285	ARCE	3	0651.2	0652.6	4.3				
	9100	GORK	20	0651.6	0653.2	8	51.0	20.0		
	8800	MANI	3	0651.8	0652.9	3.5	25.9	7.1		
	4995	MANI	3	0651.8	0652.9	3.5	24.8	5.3		
	3750	TYKW	3	0651	0652.9	8	25.0	8.0		
	3100	CRIM	45	0651	0653	7	12.0	5.0		
	2950	GORK	3	0651.6	0653.1	3.9	19.8			
	2000	TYKW	1	0651	0652.8	8	10.0	4.0		
	1000	TYKW	1	0651	0652.3	3	6.0	2.0		
	950	GORK	3	0651	0651.5	7.9	8.5	1.5		
	950	GORK	29	0654.7	0654.7	4.1	1.1	0.5		
	9285	ARCE	29	0655.5		18				
	113	POTS	45	0656.8	0657	2.4	175.0	35.0		
	100	GORK	48	0657.7	0658.8	2.8	250.0			
	100	HIRA	6	0657.5	0658.3U	2.5D	100.0U	40.0U		
	221	ABST	3	0715	0716.5	3	99.0	25.0		
	221	ABST	1	0719.5	0719.8	.7	84.0			
	221	ABST	1	0723.5	0724.2	.7	76.0			
	100	GORK	6	0841.9	0842.1	.9	80.0	40.0		
	113	POTS	5	0900.4	0900.5	.1	150.0	50.0		
	650	GORK	4	0933.5	0934.3	1.1	3.3			
	260	ONDR	41	1010	1359	300	20.0			
	29	UPIC	45	1133	1140	8.5				
	606	SGMR	4	1135.9	1136.1	.7	45.0	9.0		
	2695	SGMR	1	1136.8	1140.2	5.8	4.4	1.5		
	1415	SGMR	1	1136.4	1140.3	9.1	4.2	1.4		
	650	GORK	3	1136.2	1136.4	.5	30.0	11.0		
	950	GORK	3	1139.9	1140.5	1.4	2.4	1.0		
	100	GORK	6	1140.3	1141.1	2.3	80.0	40.0		
	2700	PENN	1	1218.7	1218.8	.5	8.7	5.1		
	950	GORK	45	1218.3	1218.5	3.3	9.0			
	950	GORK		1218.3	1220.2		17.0			
	930	BORD	45	1218	1218.6	2	51.0	2.0		
	650	GORK	46	1218.1	1218.8	2.7	53.0			
	650	GORK		1218.1	1219.3		47.0			
	650	GORK		1218.1	1220		19.0			
	200	GORK	6	1219.9	1220.4	.9	160.0	80.0		
	29	UPIC	45	1317.5	1318.5	1.5				
	23	POTS	45	1317.9	1318	1.3	5000.0	1000.0		
	2800	OTTA	20	1320	1440	200	5.8	2.9		
	9285	ARCE	41	1342.5	1359.3	29				
	1420	ARCE	22	1342.2	1417.5	58 U				
	1500	BERL	22	1424.5	1432.3	14	5.6	0.9		
	9500	BERL	22	1427	1432.6	29	14.0	1.5		
	7000	SAOP	4	1429.4	1432	4.4	11.3	0.9		
	7000	SAOP	22	1438		11.3	8.1			
	113	POTS	45	1554.5	1554.6	.4	300.0	60.0		
	23	POTS	45	1554.7	1554.8	.6	3000.0	750.0		
	113	POTS	45	1655.8	1656	.9	300.0	30.0		
	2800	OTTA	21	1702	1710	16	3.8	1.9		
	1415	SGMR	22	1703.6	1708.2	18.6	23.0	12.0		
	4995	CANR	45	1704.5	1707.5	9	38.0	9.0		
	9400	HUAN	3	1705.9	1708.2	8.3	26.1	6.1		
	7000	SAOP	41	1705.8		8.3				
	7000	SAOP	45	1705.8	1708	4.3	31.8	16.7		
	4995	BOUL	8	1705.5	1708	3.5	53.0	14.0		
	2700	PENN	45	1705.7	1708.1	10	58.2	10.1		
	930	BORD	45	1705	1708.2	9	30.0	4.0		
	10700	PENN	3	1706.3	1708.1	10.4	23.9	8.0		
	2800	OTTA	4	1706.2	1708.1	4	33.0	8.2		
	2695	CANR	45	1706	1708	8.5	43.0	16.0		
	1420	CANR	45	1706.5	1708.5	10	26.0	7.0		
	1420	BOUL	45	1706.5	1709.5	10.5	20.0	5.0		
	960	PENN	45	1706	1708.2	9	17.0	4.1		
	606	SGMR	4	1706.2	1708.4	9.3	16.0	4.0		
	410	SGMR	6	1706.5	1707	7.2	11.0	2.8		
	245	SGMR	6	1706.2	1707.9	7.6	96.0	24.0		
	9400	SLOU	40	1707	1708	7	30.0			
	9285	ARCE	3	1707.1	1707.7	2.4				
	2695	BOUL	45	1707.5	1709	2.5	20.0	5.0		
	1420	ARCE	3	1707.2	1707.8	2				
	113	POTS	45	1707.9	1708.1	.6	1400.0	200.0		
	23	POTS	41	1708.1	1708.4	5.3	40000.0	2700.0		
	7000	SAOP	4	1710.1	1711.7	4	16.7	6.4		
	4995	BOUL	45	1711	1711.5	2.5	14.0	5.0		
	2800	OTTA	1	1711	1712	3	8.8	4.4		

SOLAR RADIO EMISSION
OUTSTANDING OCCURRENCES

AUGUST 1972

AUG. 1972	FREQUENCY	STATION	TYPE	STARTING TIME UT	TIME OF MAXIMUM UT	DURATION MINUTES	FLUX DENSITY 10^{-22} Wm^{-2} Hz^{-1} PEAK	FLUX DENSITY 10^{-22} Wm^{-2} Hz^{-1} MEAN	INT	REMARKS
30	245	SGMR	6	1725.6	1727.3	4.8	13.0	3.4		
	2800	OTTA	20	1750	1815	50	2.2	1.1		
	245	SGMR	6	1819.5	1819.6	4	21.0	5.2		
	2695	BOUL	45	2008	2014	19	71.0	15.0		
	10700	PENN	3	2011.3	2013.3	10.9	56.7	3.4		
	8800	SGMR	4	2011.7	2013.4	9.8	78.0	20.0		
	4995	BOUL	8	2011.5	2013	2.5	88.0	35.0		
	2695	SGMR	46	2011.5	2013.3	9.8	83.0	21.0		
	1420	BOUL	45	2011.5	2014.5	14	48.0	15.0		
	15400	SGMR	4	2012.6	2013.2	1.4	41.0	10.0		
	9400	HUAN	3	2012.6	2013.2	1.5	61.4	21.8		
	7000	SAOP	13	2012.6	2013	1.2	65.8	33.0		
	4995	SGMR	4	2012.5	2013.2	11.8	75.0	19.0		
	2800	OTTA	4	2012	2013.2	4	82.0	20.0		
	2700	PENN	45	2012.1	2013.3	3.6	133.0	26.7		
	1415	SGMR	46	2012.4	2013.3	13.1	45.0	11.0		
	200	HIRA	45	2012.5	2013	3.5	1200.0	130.0		
	960	PENN	45	2012.3	2013.5	9.7	22.0	6.9		
	606	SGMR	46	2012.8	2013.3	12.8	34.0	8.4		
	410	SGMR	6	2012.9	2013.3	10.4	190.0	48.0		
	245	SGMR	7	2012.7	2013.2	8.8	360.0	90.0		
	100	HIRA	6	2013	2013.5	2.5	230.0	50.0		
	2700	PENN	31	2015.7	2039.2	69.9	-19.7	-9.8		
	2800	OTTA	30	2016	2023	90	-12.6	-6.0		
	2800	OTTA	4	2017.7	2018.8	3.3	12.6	6.3		
	200	HIRA	45	2017.5	2018	4	1100.0	100.0		
	18	BOUL	6	2017	2020	4			1	
	18	MCMA	6	2017	2018	2			1	
	4995	BOUL	3	2018	2019.5	3.5	11.0	4.0		
	2700	PENN	3	2018.2	2018.6	3.2	17.2	8.6		
	100	HIRA	6	2018	2018.7	3	230.0	60.0		
	960	PENN	31	2022	2028	32.8	-3.1	-1.6		
	15400	SGMR	3	2029.3	2029.4	.7	45.0	11.0		
	10700	PENN	3	2029.2	2029.5	3.6	56.7	14.0		
	8800	SGMR	3	2029.3	2029.6	1.7	48.0	12.0		
	4995	SGMR	3	2029.3	2029.5	1.3	16.0	4.1		
	4995	BOUL	8	2029	2029.5	1.5	21.0	7.0		
	2800	OTTA	3	2029	2029.5	4	40.0	10.0		
	2700	PENN	3	2029.2	2029.5	1.8	54.2	11.8		
	2695	SGMR	3	2029.2	2029.5	2.1	39.0	9.6		
	2695	BOUL	8	2029.5	2031	3	31.0	8.0		
	1420	BOUL	8	2029.5	2030.5	6	24.0	9.0		
	1415	SGMR	3	2029.4	2029.7	4.5	21.0	5.3		
	960	PENN	1	2029.4	2029.6	5.1	7.9	2.9		
	606	SGMR	45	2029.4	2029.7	3.6	200.0	50.0		
	410	SGMR	7	2029.4	2029.6	.6	260.0	64.0		
	100	HIRA	6	2042.5	2044.4	5	180.0	30.0		
	10700	PENN	1	2043.5	2044.7	3.2	9.4	4.7		
	4995	BOUL	3	2043	2044	2	9.0	3.0		
	2700	PENN	1	2043.5	2044.5	2	9.8	4.9		
	18	BOUL	6	2043	2045	3			1	
	18	MCMA	6	2043	2044	3			1	
	960	PENN	1	2043.5	2045.9	4.1	3.9	2.0		
	245	SGMR	6	2043.8	2045.4	5	46.0	12.0		
	2800	OTTA	1	2044	2044.3	1.3	3.6	1.8		
	2695	BOUL	3	2044	2044.5	1.5	4.0	1.0		
	1420	BOUL	45	2044	2046	3	3.0	1.0		
	410	SGMR	6	2044	2044.5	3.1	63.0	16.0		
	245	SGMR	6	2232.7	2232.9	3.5	13.0	3.4		
	245	SGMR	6	2259.8	2300.3	2.5	32.0	8.1		
	4995	BOUL	8	2358.5	2359	1.5	16.0	6.0		
	8800	MANI	3	2359.4	2359.7	.8	17.2	4.9		
	4995	MANI	3	2359.4	2359.6	.8	13.8	5.9		
	4995	CRON	8	2359	2359.5	1.5	11.0	4.0		
	2695	MANI	1	2359.4	2359.6	.9	6.7	1.3		
	2000	TYKW	1	2359.3	2359.7	.7	3.0	1.0		
	1420	BOUL	3	2359.5	0000.5	2	4.0	1.0		
	1420	CRON	8	2359.5	0000	1	4.0	2.0		
31	9400	TYKW	3	0011.5	0011.8	1.5	18.0	6.0		
	8800	MANI	3	0011.5	0011.9	2.3	29.4	9.8		
	4995	MANI	3	0011.5	0011.9	2.3	25.6	7.9		
	4995	BOUL	8	0011	0011.5	2	17.0	7.0		
	4995	CRON	8	0011.5	0012	1	20.0	8.0		
	3750	TYKW	3	0011.5	0011.8	1.5	10.0	3.0		
	2695	CRON	3	0011	0011.5	1	5.0	2.0		
	2695	MANI	1	0011.5	0011.8	2.1	4.0	1.3		
	2000	TYKW	1	0011.5	0011.9	1.5	6.0	2.0		
	1420	BOUL	3	0011.5	0012.5	3	6.0	2.0		
	1420	CRON	8	0011.5	0012	1	4.0	2.0		
	1415	MANI	1	0011.6	0011.8	.8	2.3	1.1		
	606	MANI	40	0011.6	0011.8	1.7	196.0	21.8		
	9750	IRKU	1	0111	0111.7	3	24.0			
	1420	CRON	8	0242.5	0243	1	5.0	2.0		
	8800	MANI	3	0409.3	0415.4	20.9	20.1	4.5		
	4995	CRON	21	0409.5	0410.5	17.5	14.0	4.0		
	4995	MANI	3	0410.4	0411.2	21.4	14.8	5.9		
	3750	TYKW	45	0410	0411.2	10	24.0	12.0		
	2950	GORK	45	0410.5	0411.6	27	34.0			
	2950	GORK		0410.5	0412.5		34.0			

SOLAR RADIO EMISSION
OUTSTANDING OCCURRENCES

AUGUST 1972

AUG 1972	FREQUENCY	STATION	TYPE	STARTING TIME UT	TIME OF MAXIMUM UT	DURATION MINUTES	FLUX DENSITY 10^{-22} Wm^{-2} Hz^{-1} PEAK	FLUX DENSITY MEAN	INT	REMARKS
31	2695	CRON	45	0410	0411.5	3	11.0	3.0		
	2695	MANI	4	0410.2	0411.2	12.2	17.6	6.3		
	2000	TYKW	1	0410	0412.2	4	6.0	3.0		
	1000	TYKW	45	0410	0410.8	4	16.0	3.0		
	1420	CRON	8	0411.5	0412.5	2.5	39.0	13.0		
	1415	MANI	40	0411	0412.2	2.3	63.0	8.6		
	950	GORK	40	0411.1	0413.4	5.5	17.0			
	2000	TYKW	29	0414		45	3.0	2.0		
	2950	GORK	29	0415	0415.3	23	15.0			
	3750	TYKW	29	0420		90	5.0	2.0		
	3750	TYKW	1	0421	0425	10	3.0	1.0		
	2695	CRON	3	0448.5	0449	2.5	4.0	2.0		
	2000	TYKW	1	0449	0450.1	3	6.0	2.0		
	1000	TYKW	1	0449.8	0450.2	2	4.0	2.0		
	1420	CRON	45	0450	0450.5	3.5	9.0	3.0		
	950	GORK	1	0450.2	0450.8	1.8	5.0	2.5		
	650	GORK	45	0450	0450.2	1.5U	60.0			
	650	GORK		0450	0450.8		60.0			
	650	GORK	3	0522.8	0522.8	.3	56.0	25.0		
	536	ONDR	45	0650	0651	4.5	50.0			
	237	TRST	41	0704.8	0705	.6	170.0			
	536	ONDR	5	0934.5	0934.5	.5	70.0			
	221	ABST	3	1046	1046.2	.7	56.0			
	536	ONDR	45	1210	1219	10	95.0			
	245	SGMR	6	1228.6	1229.2	1.9	10.0	2.5		
	410	SGMR	6	1229.1	1229.6	.9	16.0	4.0		
	29	UPIC	5	1236.5	1236.5	.5				
	4995	CANR	3	1255	1256.5	6	13.0	5.0		
	410	SGMR	6	1335.6	1335.9	5.2	12.0	3.0		
	237	TRST	42	1335.6	1339.6	5.8	240.0			
	245	SGMR	6	1335.1	1339.5	6.6	122.0	30.0		
	606	SGMR	8	1339.6	1339.7	.3	19.0	4.8		
	260	ONDR	45	1339	1339.5	1	75.0D			
	536	ONDR	5	1436	1436	1	65.0			
	2800	OTTA	20	1455	1505	30	2.8	1.4		
	2695	CANR	45	1609	1613	9	19.0	6.0		
	4995	CANR	35	1610.5	1611.5	45	10.0	3.0		
	4995	CANR		1610.5	1612.5					
	4995	BOUL	21	1610	1612.5	14	16.0	5.0		
	2800	OTTA	21	1610	1615	85	6.6	3.0		
	2700	PENN	45	1610.6	1612.6	3.8	30.5	14.6		
	2695	BOUL	21	1610.5	1614	16	15.0	6.0		
	2695	SGMR	4	1610.5	1613.2	28.8	19.2	7.9		
	1420	CANR	3	1610	1613.5	5	21.0	5.0		
	1420	BOUL	45	1610.5	1613.5	5	20.0	6.0		
	960	PENN	45	1610.6	1613.2	4.4	16.3	3.9		
	606	SGMR	46	1610.3	1613.4	6.4	78.0	32.0		
	4995	SGMR	20	1611.5	1612.5	22	9.2	4.6		
	2800	OTTA	4	1611.7	1613	3	16.0	8.0		
	1415	SGMR	4	1611.2	1613.2	17.5	21.2	8.4		
	930	BORD	45	1611	1613.2	4	30.0	3.0		
	8800	SGMR	1	1612	1612.1	7.6	6.8	3.4		
	410	SGMR	6	1613.8	1613.9	10.3	4.7	2.0		
	2700	PENN	29	1614.4	1614.4	20.6	11.7	5.9		
	960	PENN	29	1615	1615	25.8	1.6	0.8		
	245	SGMR	6	1739.6	1754.4	12.9	20.4	5.0		
	410	SGMR	6	1744.7	1745.3	7.8	5.6	2.0		
	2800	OTTA	20	2115	2155	100	3.4	1.7		
	2695	PENT	20	2315	2355	75	2.8	1.4		
	100	HIRA	6	2345.5	2345.9	1	80.0	20.0		

Observatories:

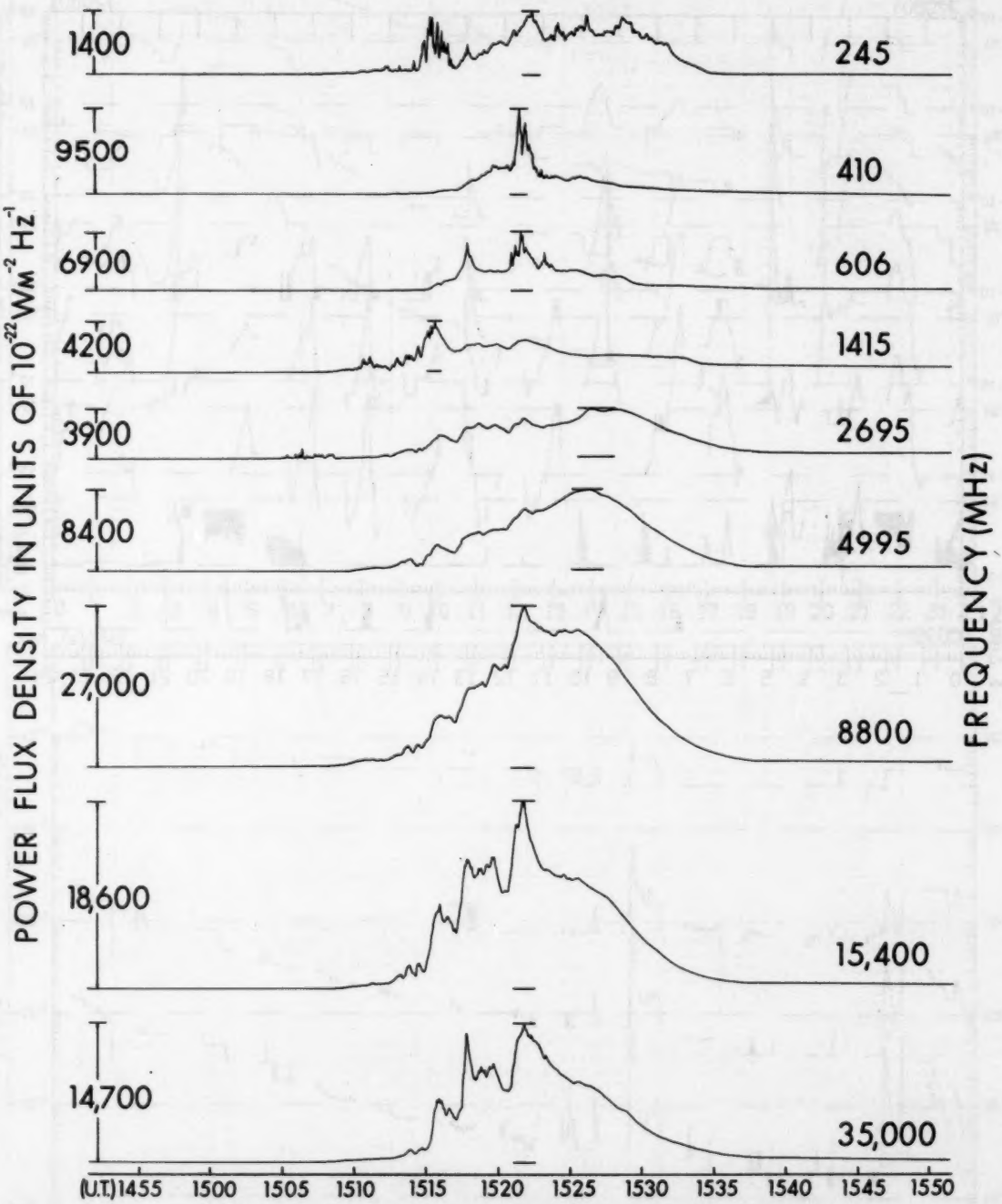
ABST = Abastumani
ARCE = Arcetri
BERL = Berlin-Adlershof
BORD = Bordeaux
BOUL = Boulder
CANR = Canary Islands
CRIM = Simferopol
CRON = Carnarvon
GORK = Gorky
HARS = Harestua
HIRA = Hiraiso
HUAN = Huancayo
IRKU = Irkutsk
IZMI = Moscow IZMIRAN
KIEV = Kiev
MANI = Manila
MCMA = McMath-Hulbert
ONDR = Ondrejov
OTTA = Ottawa ARO
PENN = Penn. State Univ.
PENT = Penticton
POTS = Potsdam
SLOU = Slough
SGMR = Sagamore Hill
TOKO = Tokyo
TRST = Trieste
TYKW = Toyokawa
UPIC = Upice
VORO = Voroshilov

Explanation of Type Code:

1 Simple 1
2 Simple 1F
3 Simple 2
4 Simple 2F
5 Simple
6 Minor
7 Minor +
8 Spike
20 Simple 3
21 Simple 3A
22 Simple 3F
23 Simple 3AF
24 Rise
25 Rise A
26 Fall
27 Rise and Fall
28 Precursor
29 Post Burst Increase
30 Post Burst Increase A
31 Post Burst Decrease
32 Absorption
40 Fluctuation
41 Group of Bursts
42 Series of Bursts
43 Onset of Noise Storm
44 Noise Storm in Progress
45 Complex
46 Complex F
47 Great Burst
48 Major
49 Major +

SELECTED SOLAR NOISE BURST

7 AUGUST 1972

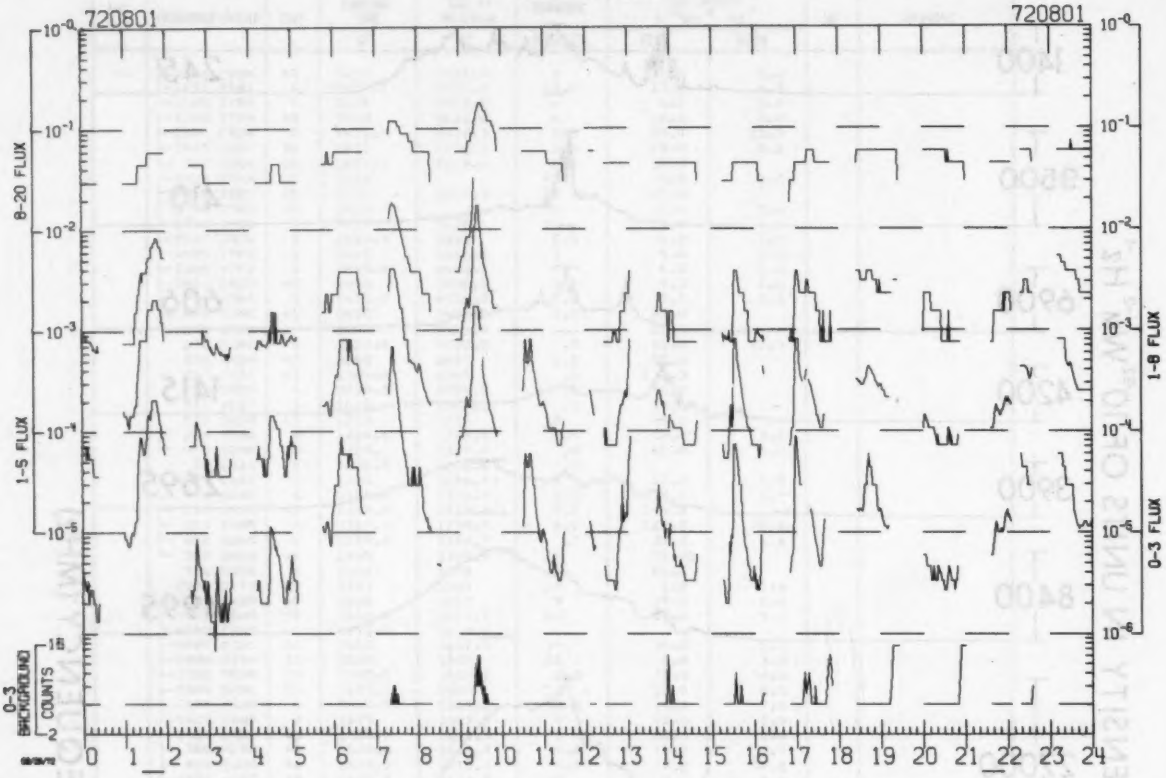


GREAT BURST OBSERVED 7 AUGUST, 1972
AT SAGAMORE HILL RADIO OBSERVATORY
HAMILTON, MASS.

70
Aug 72

SOLAR X-RAYS MEASURED BY SATELLITE SOLRAD 10 - EXPLORER 44

AUGUST 1972



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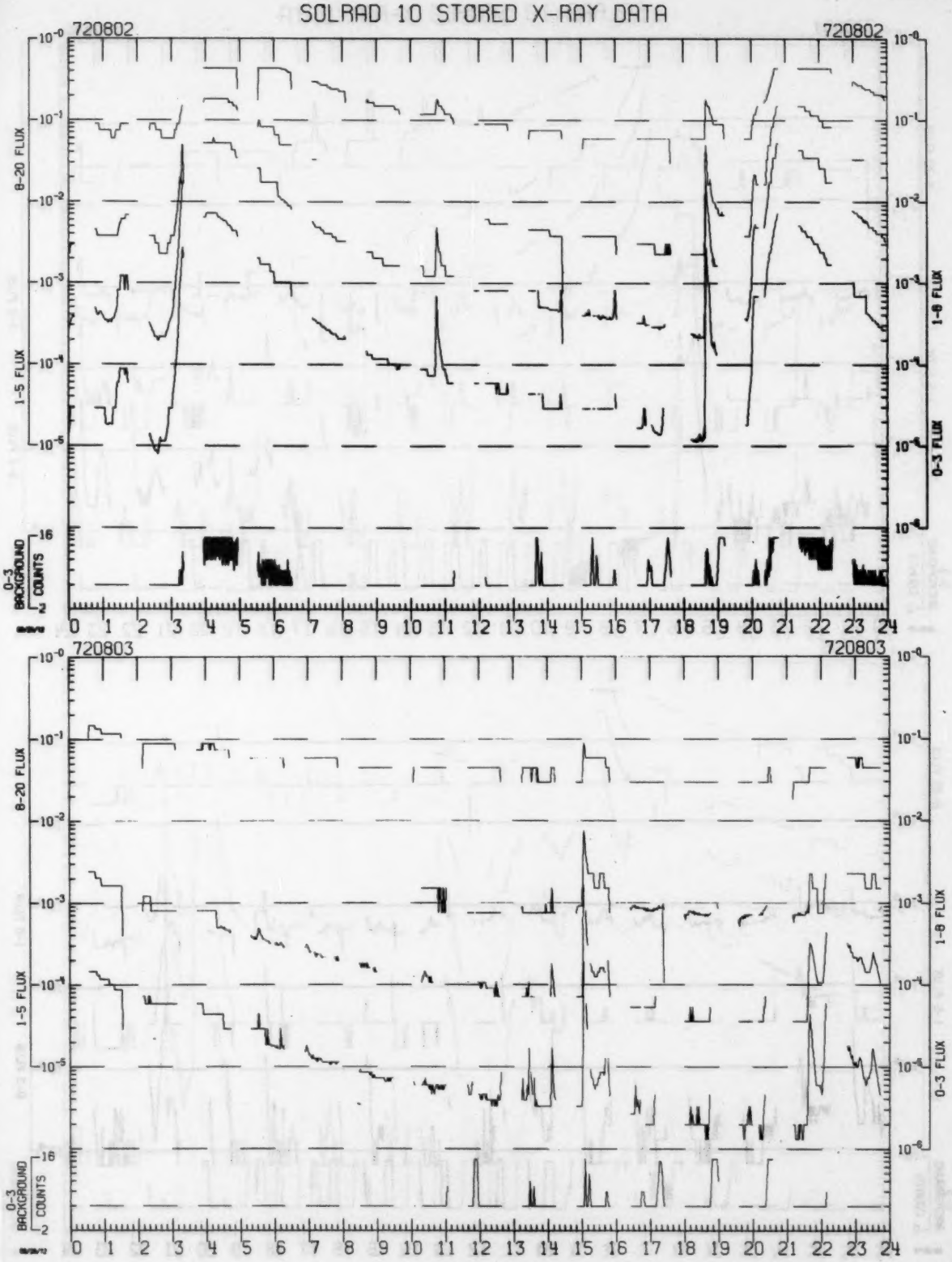

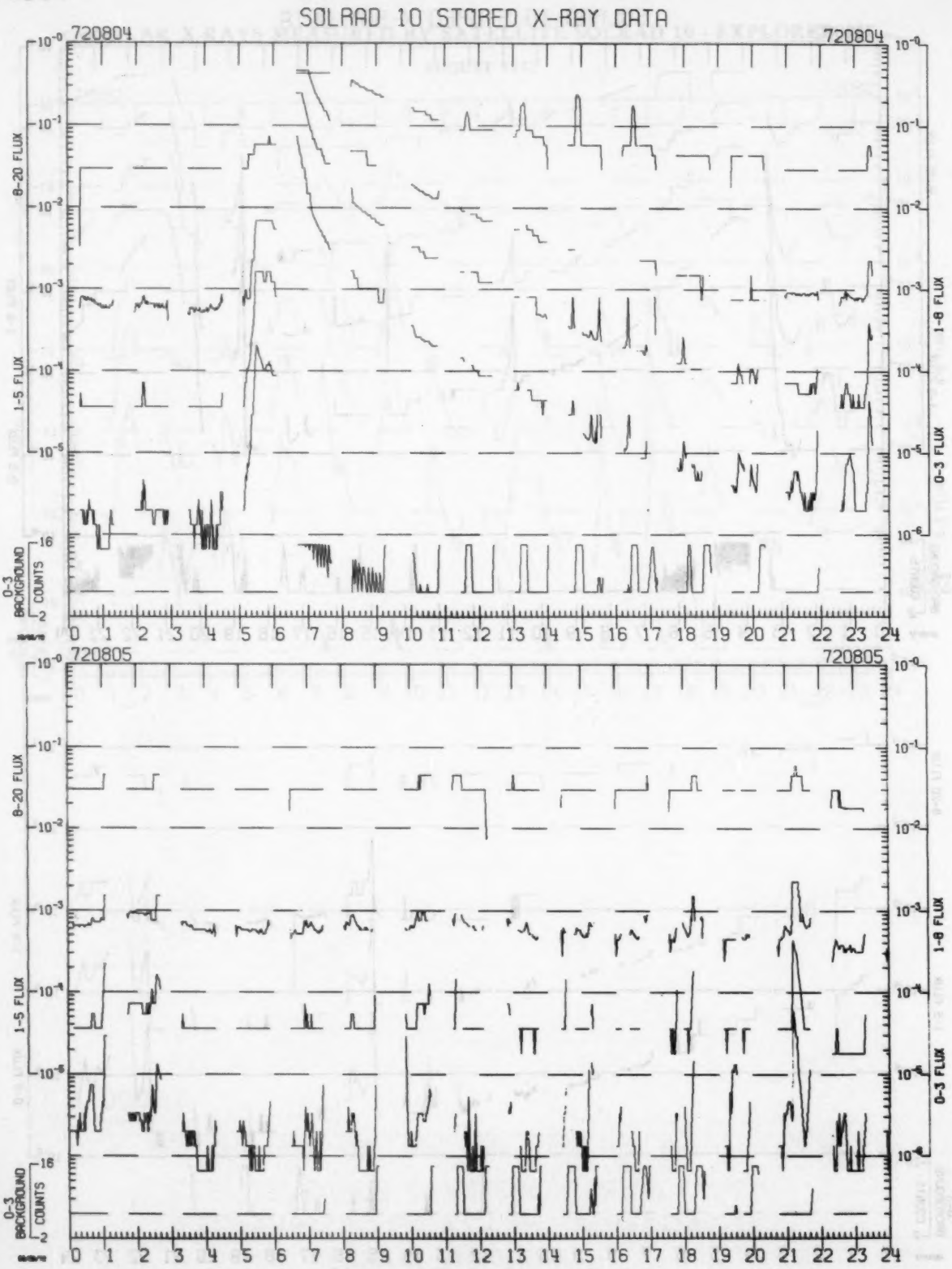
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1-5 FLUX
1-8 FLUX
0-3 FLUX
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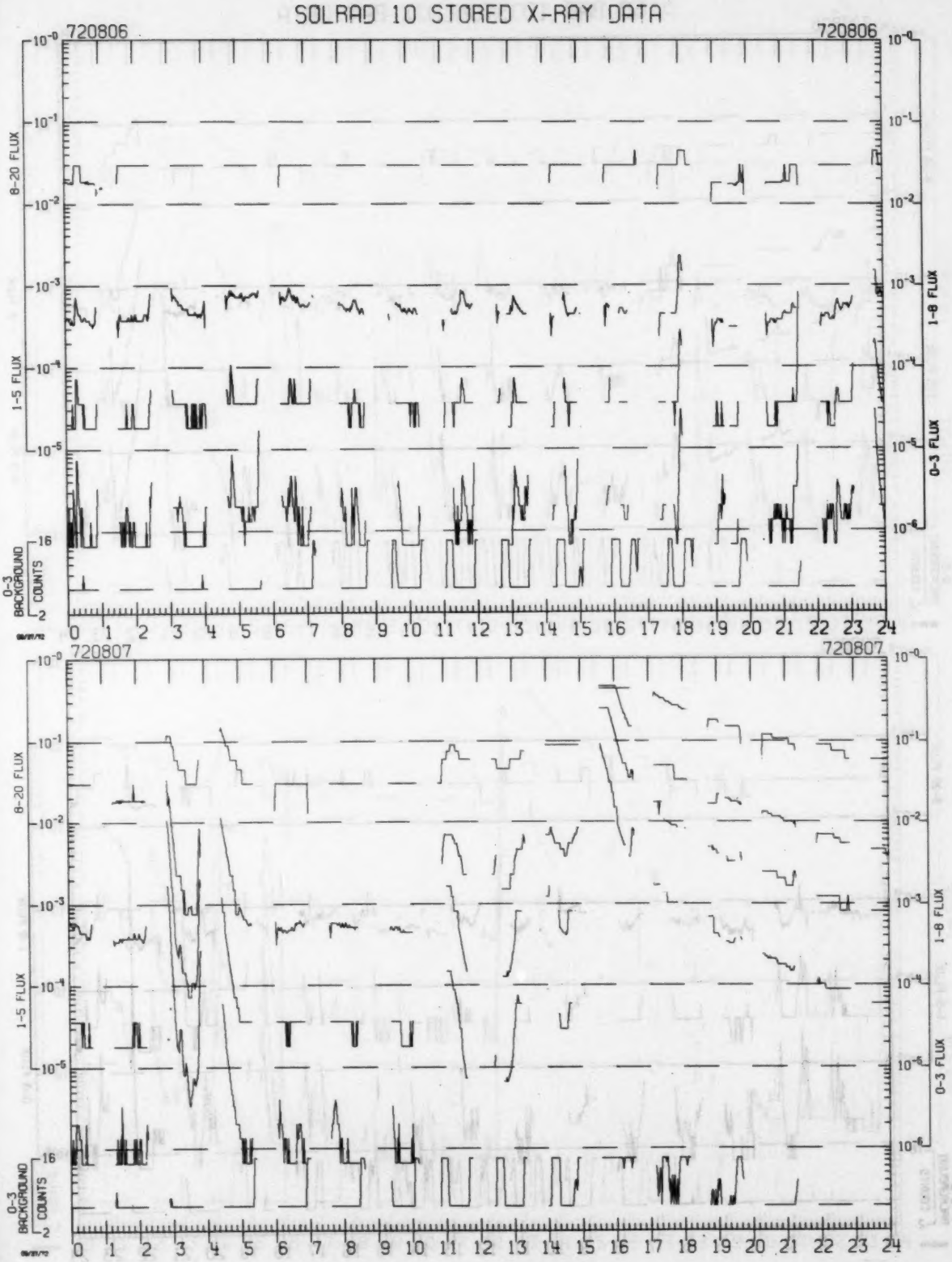

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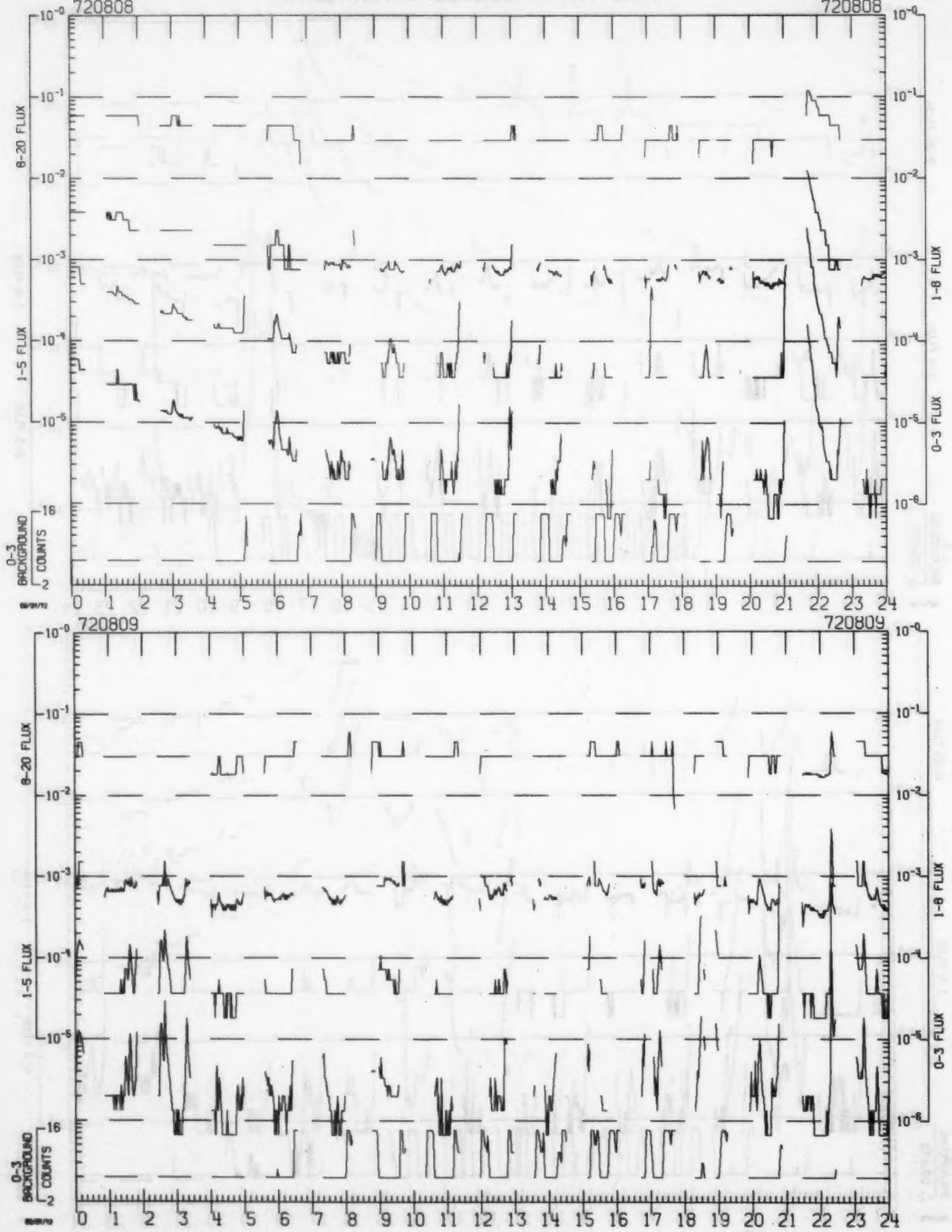

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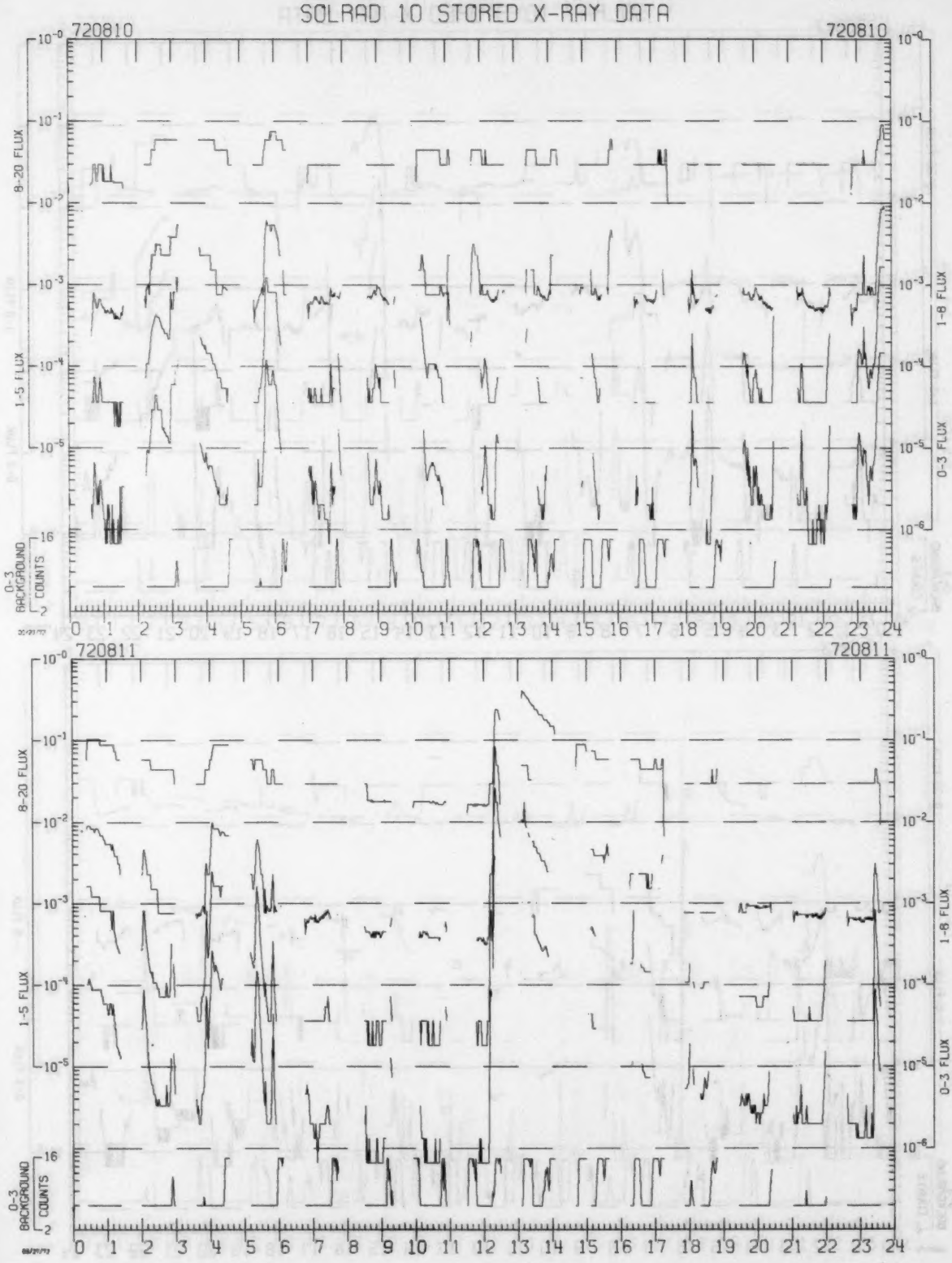

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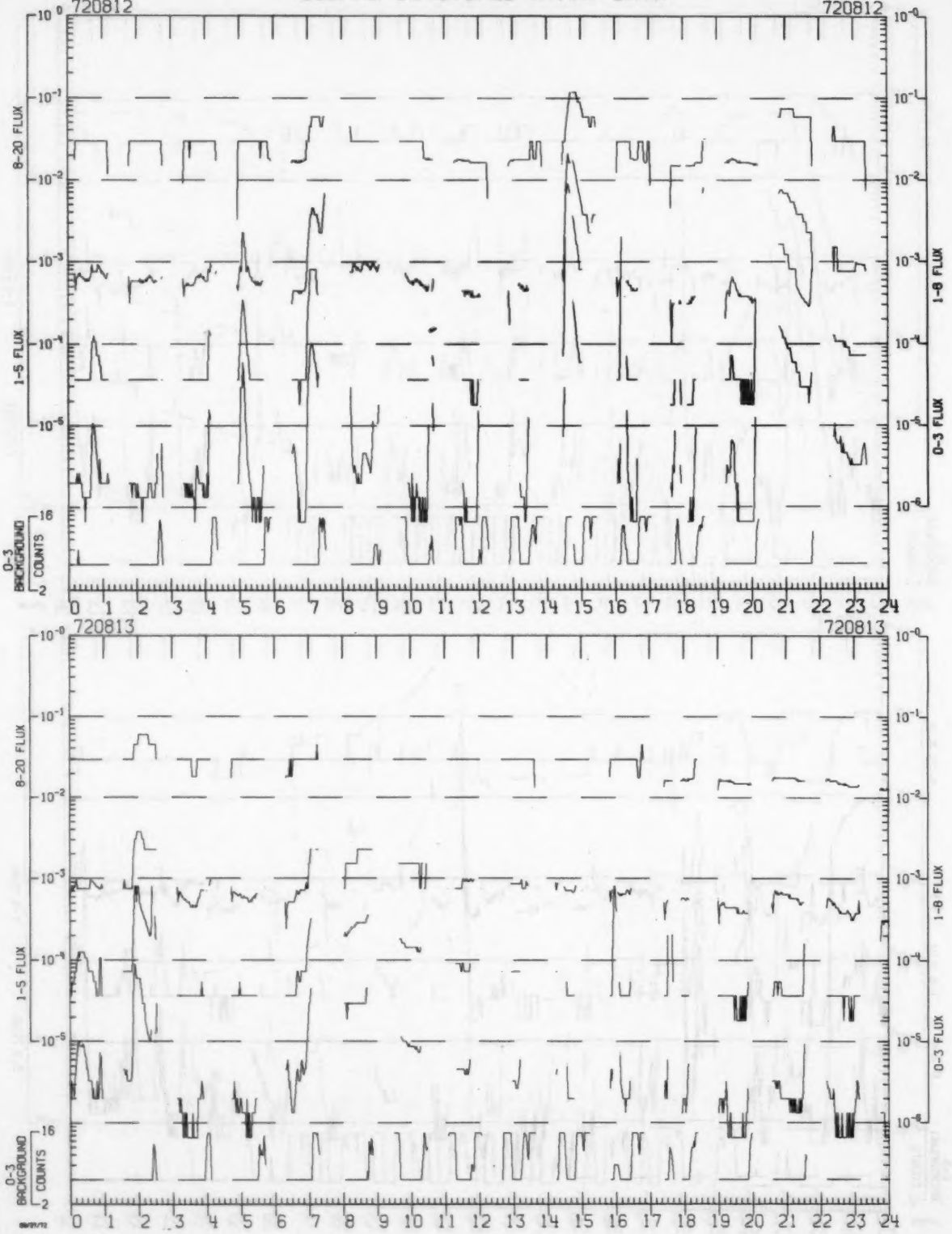

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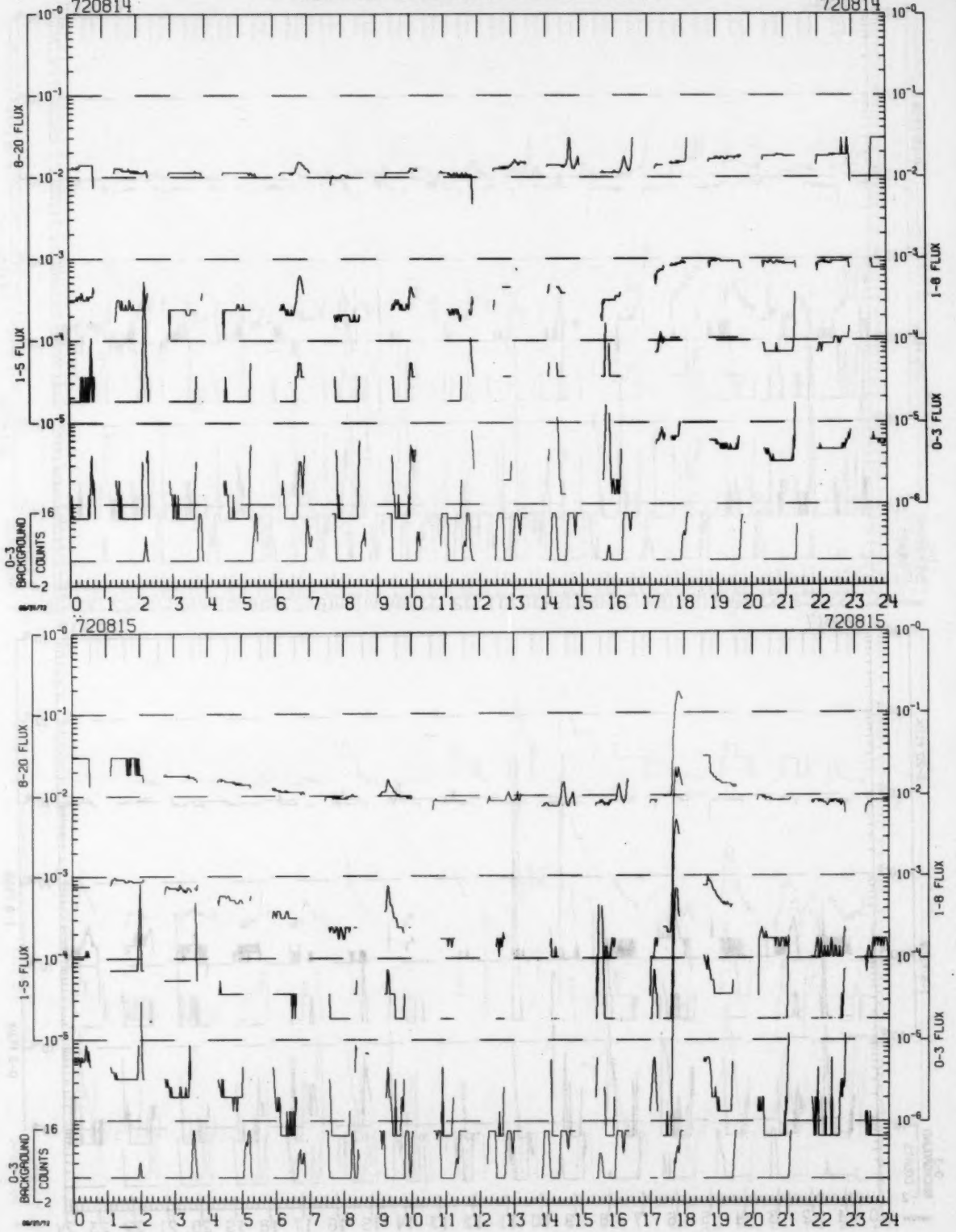

78
Aug 72

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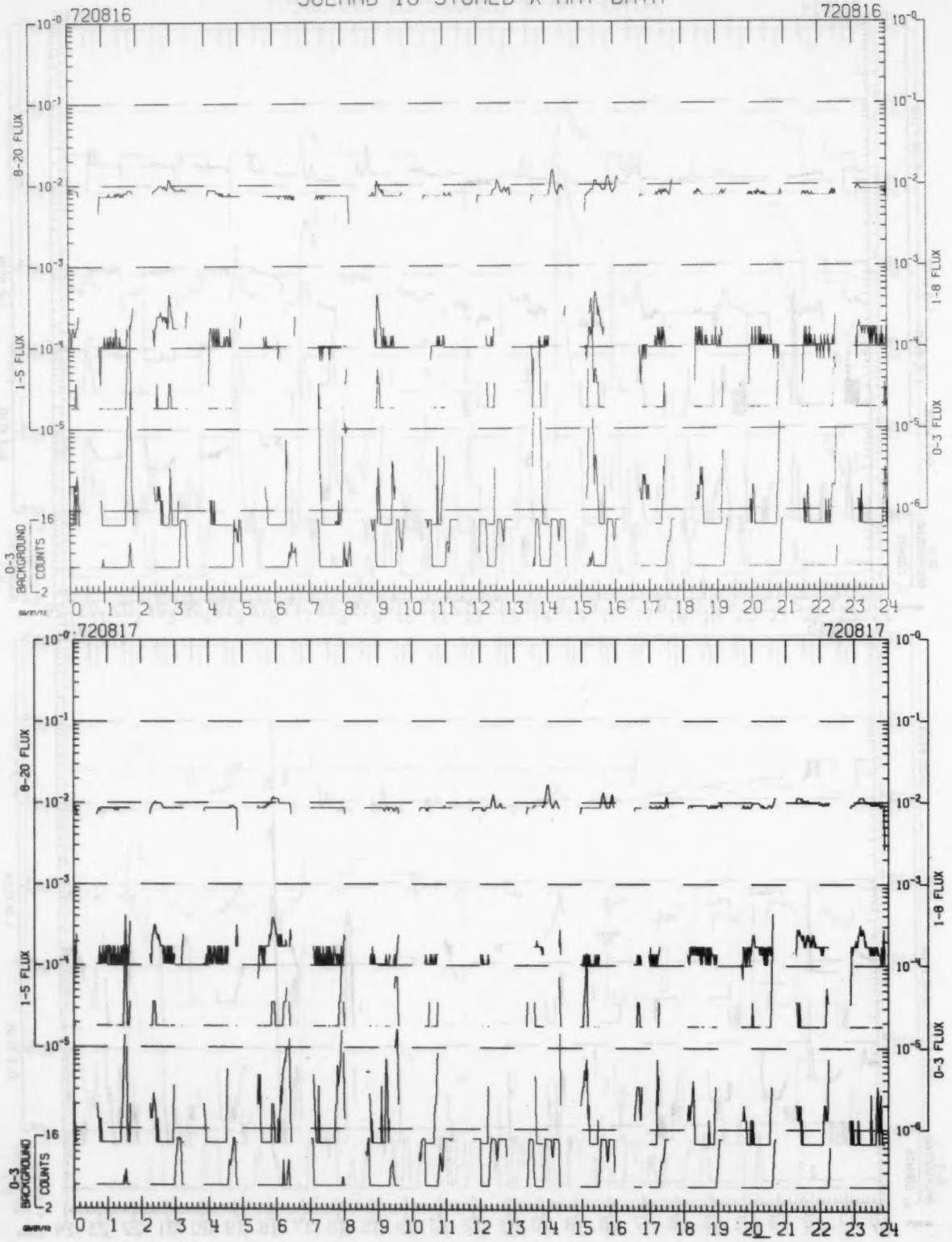

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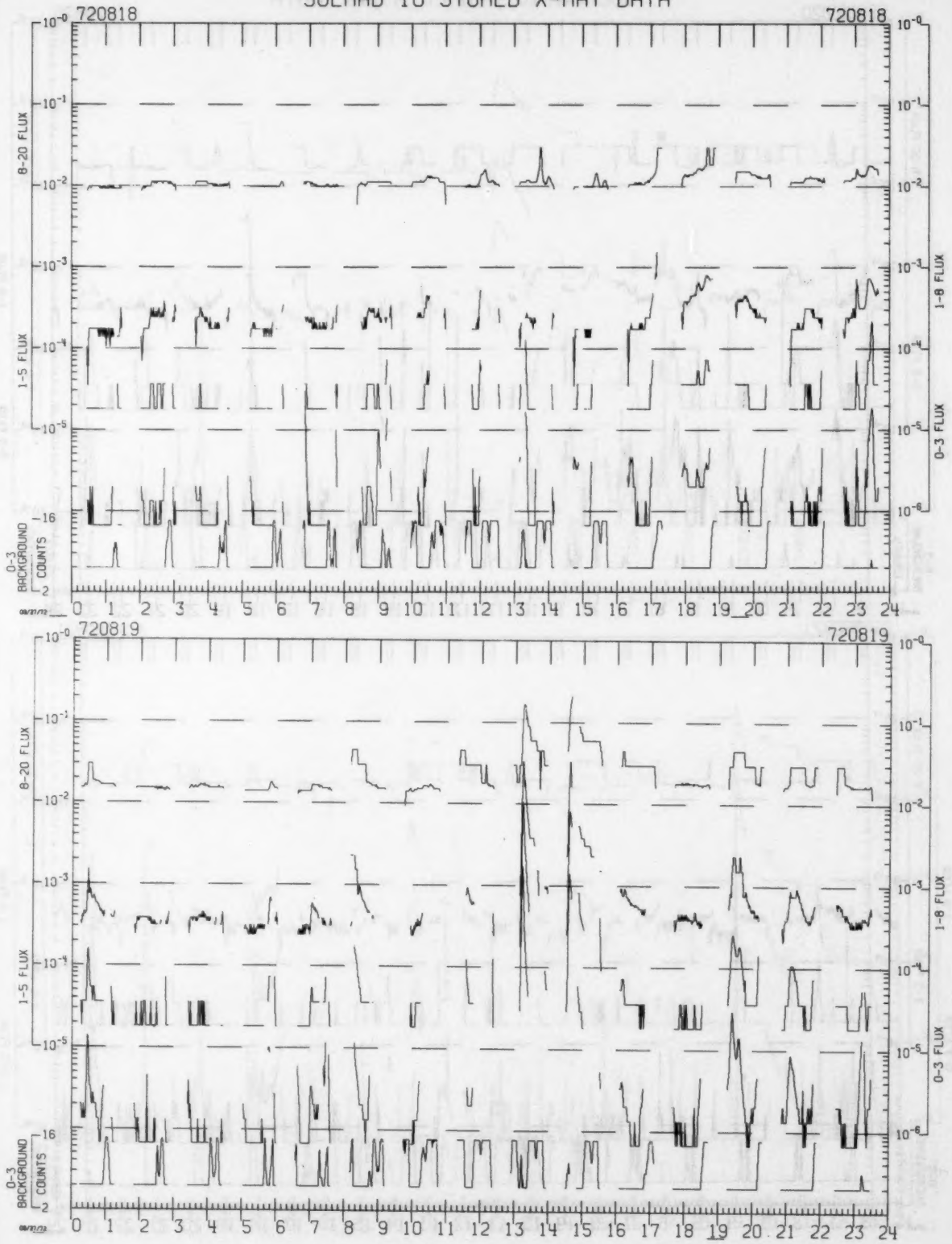

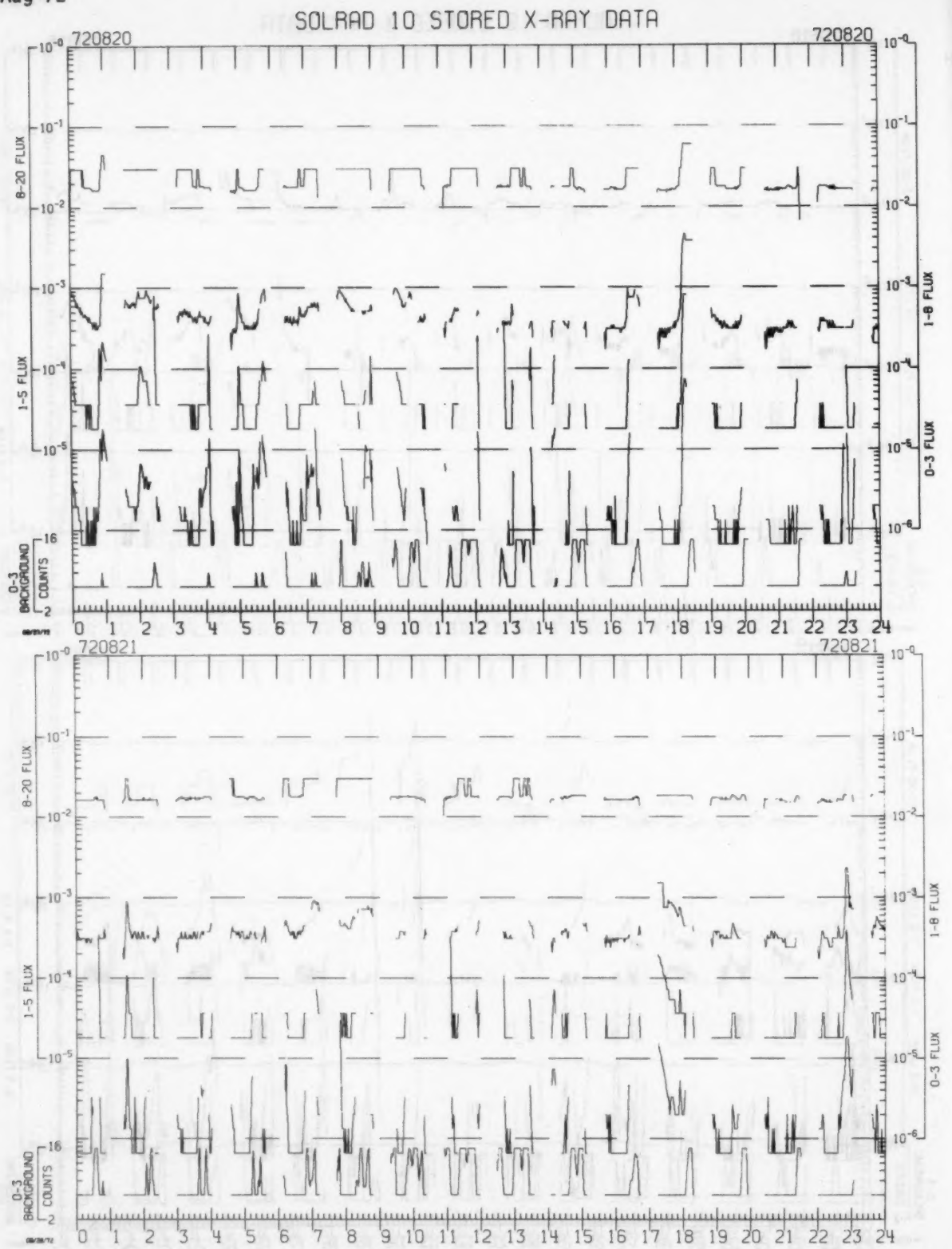
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720821
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1-5 FLUX
1-8 FLUX
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0-3 BACKGROUND COUNTS
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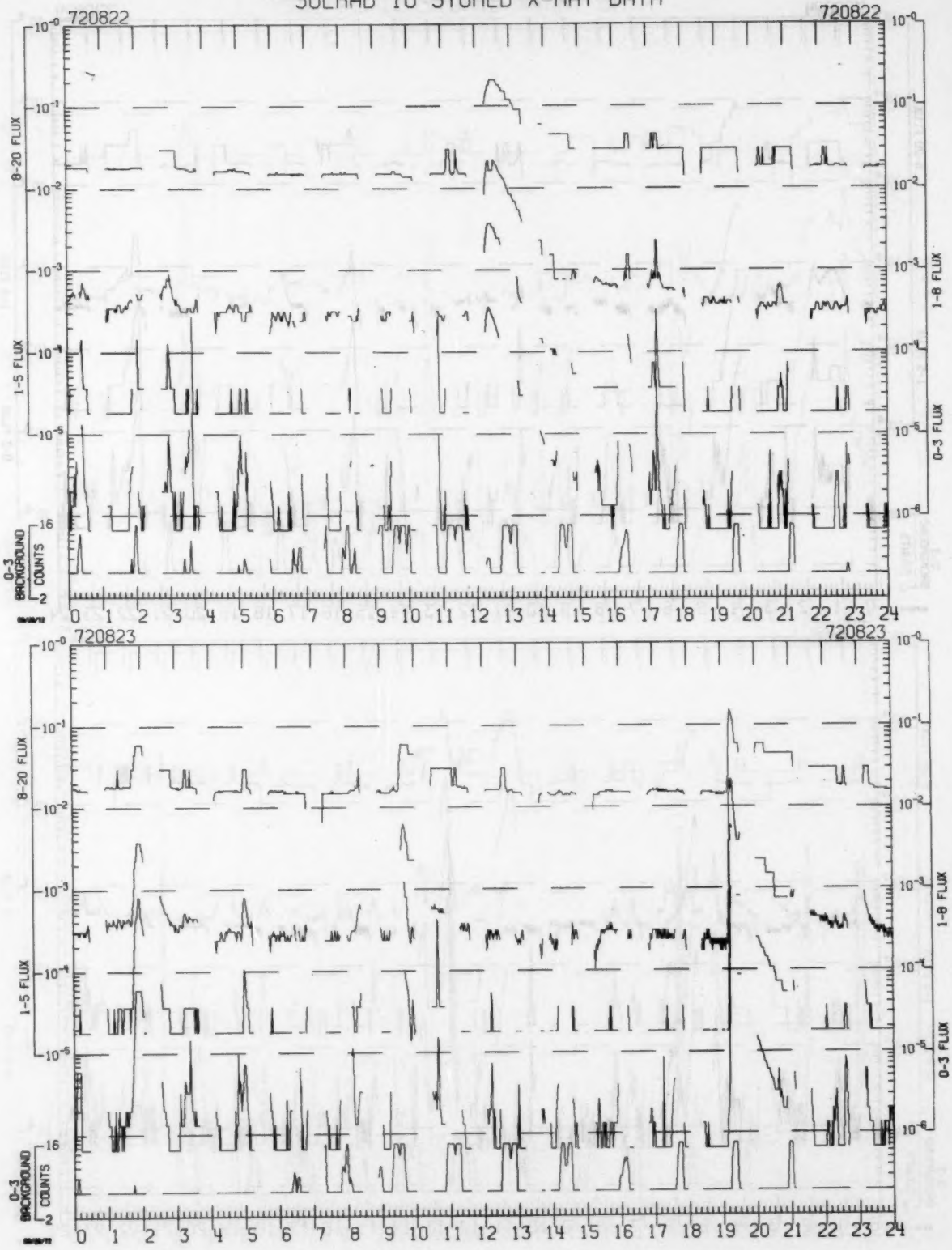

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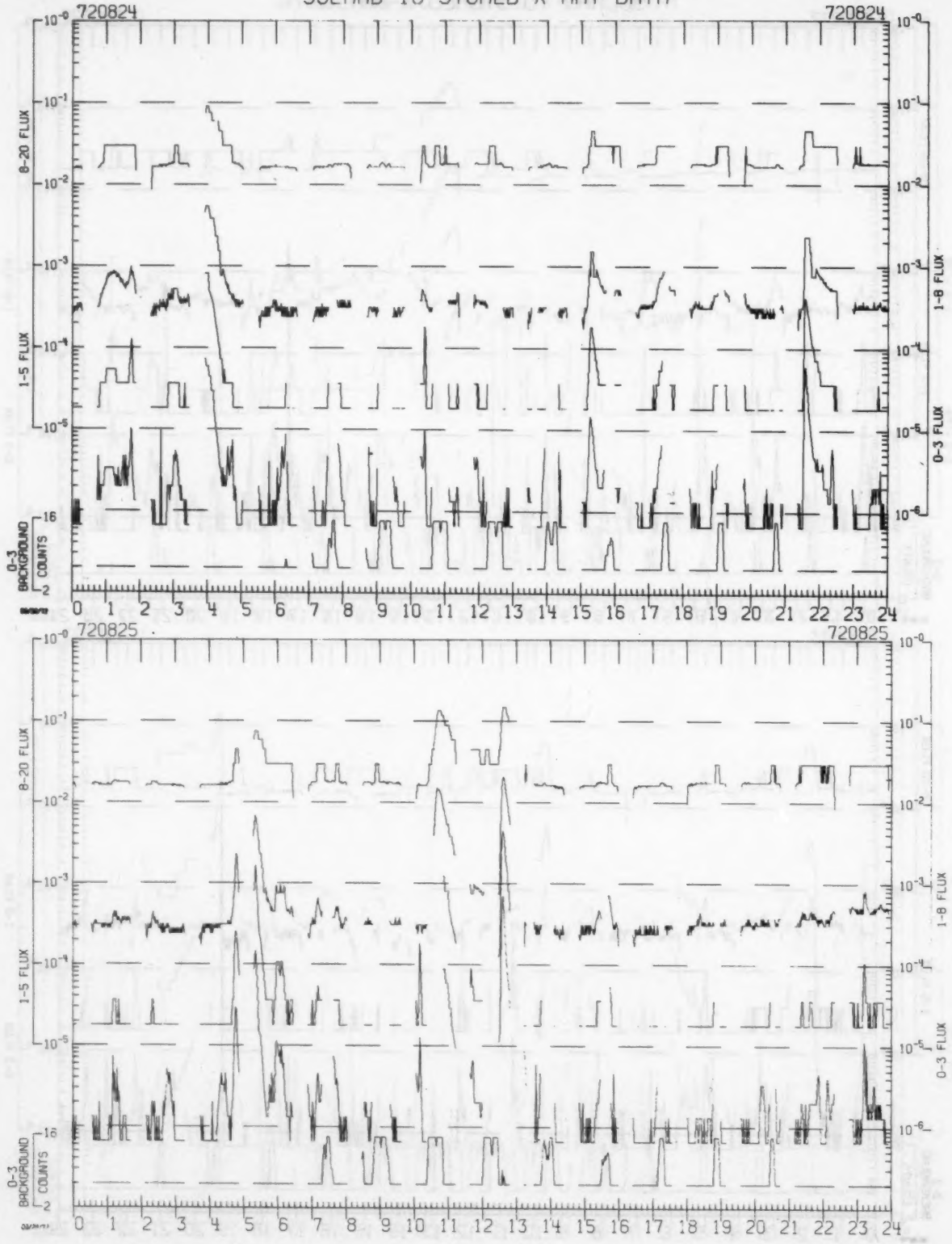

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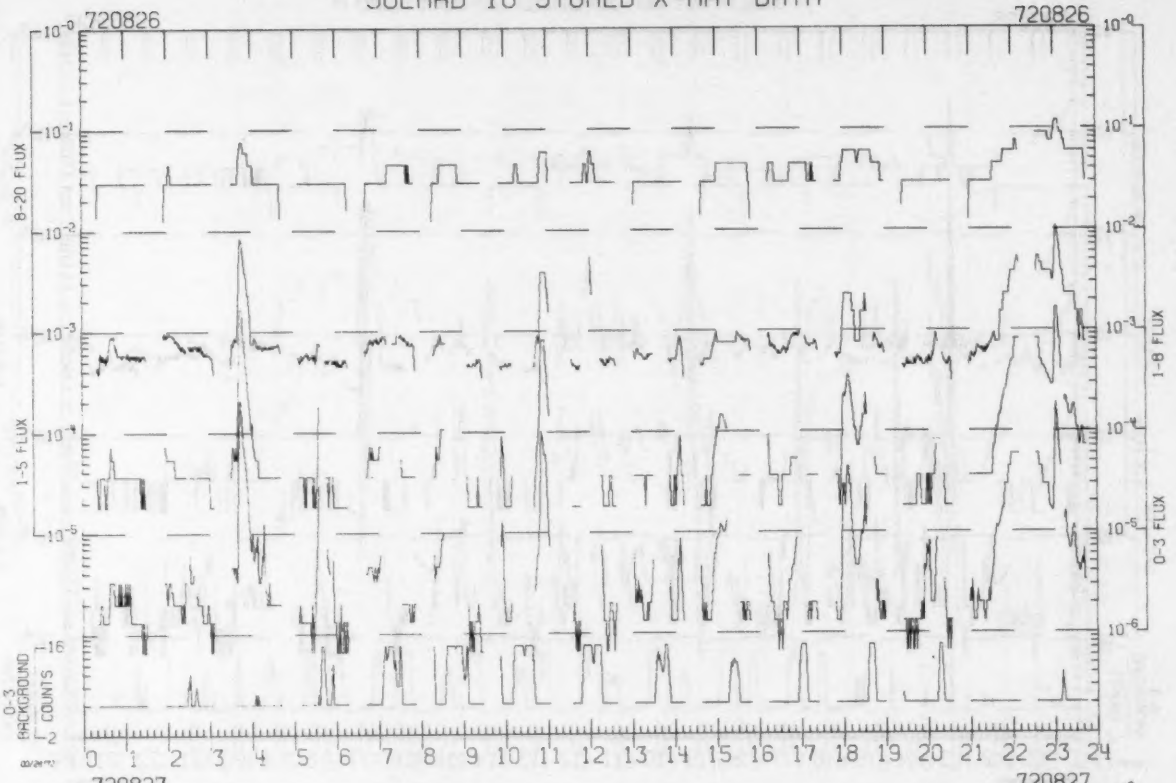
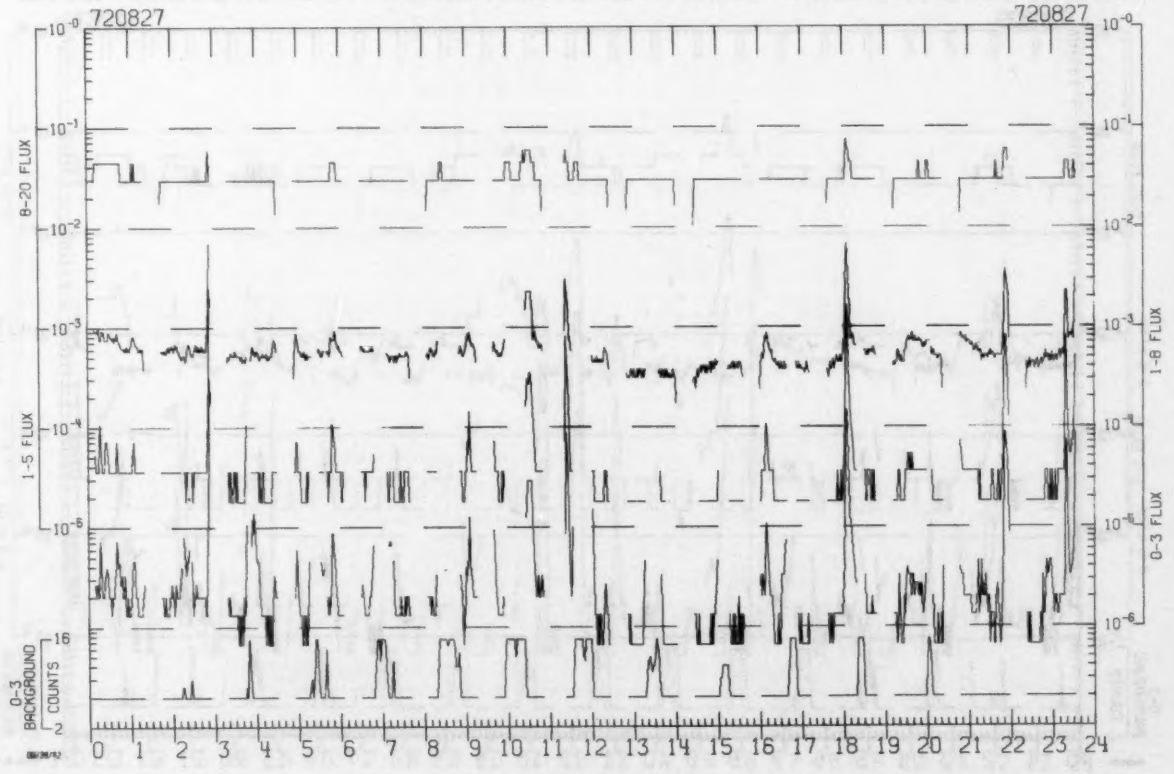
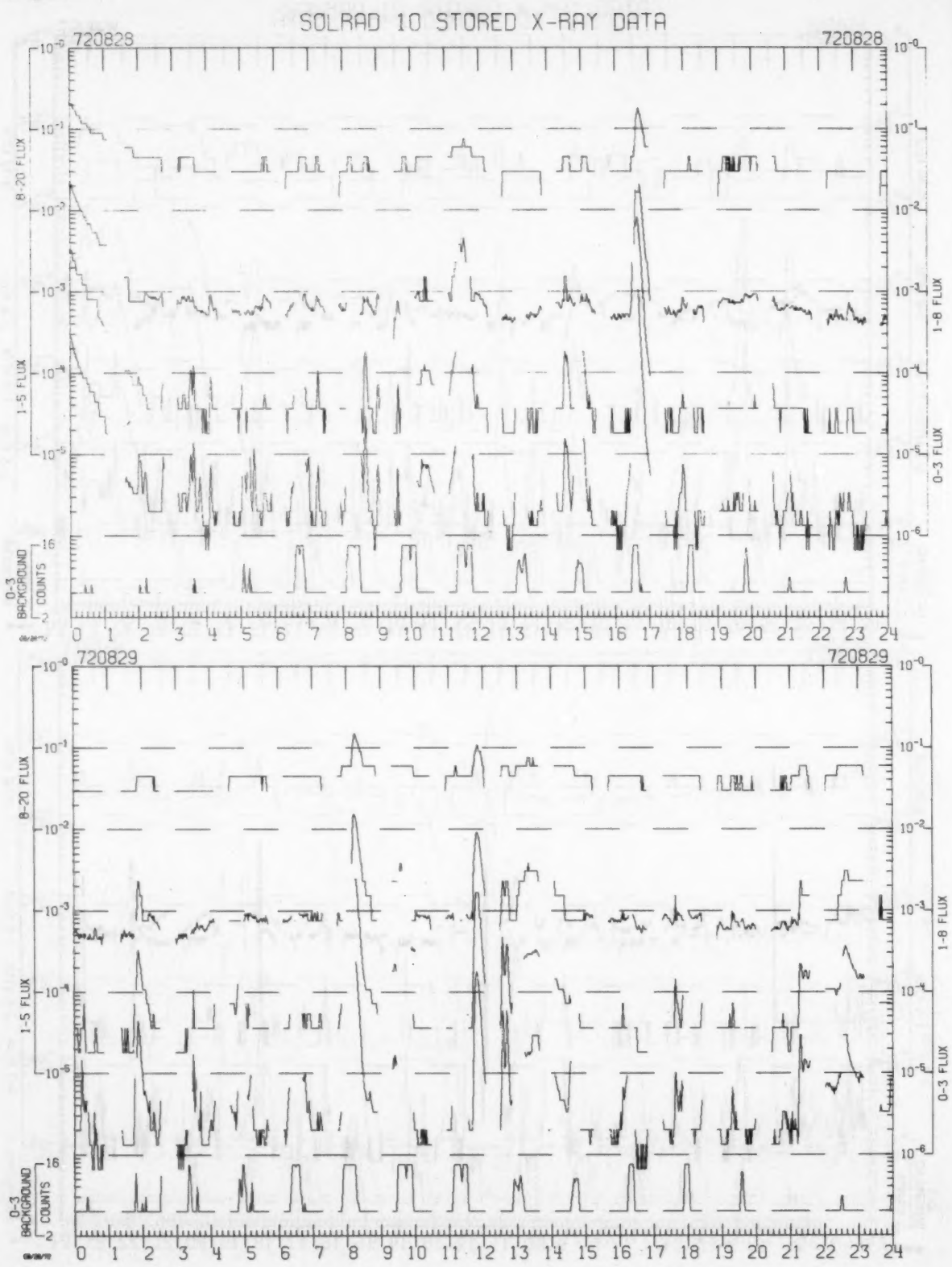
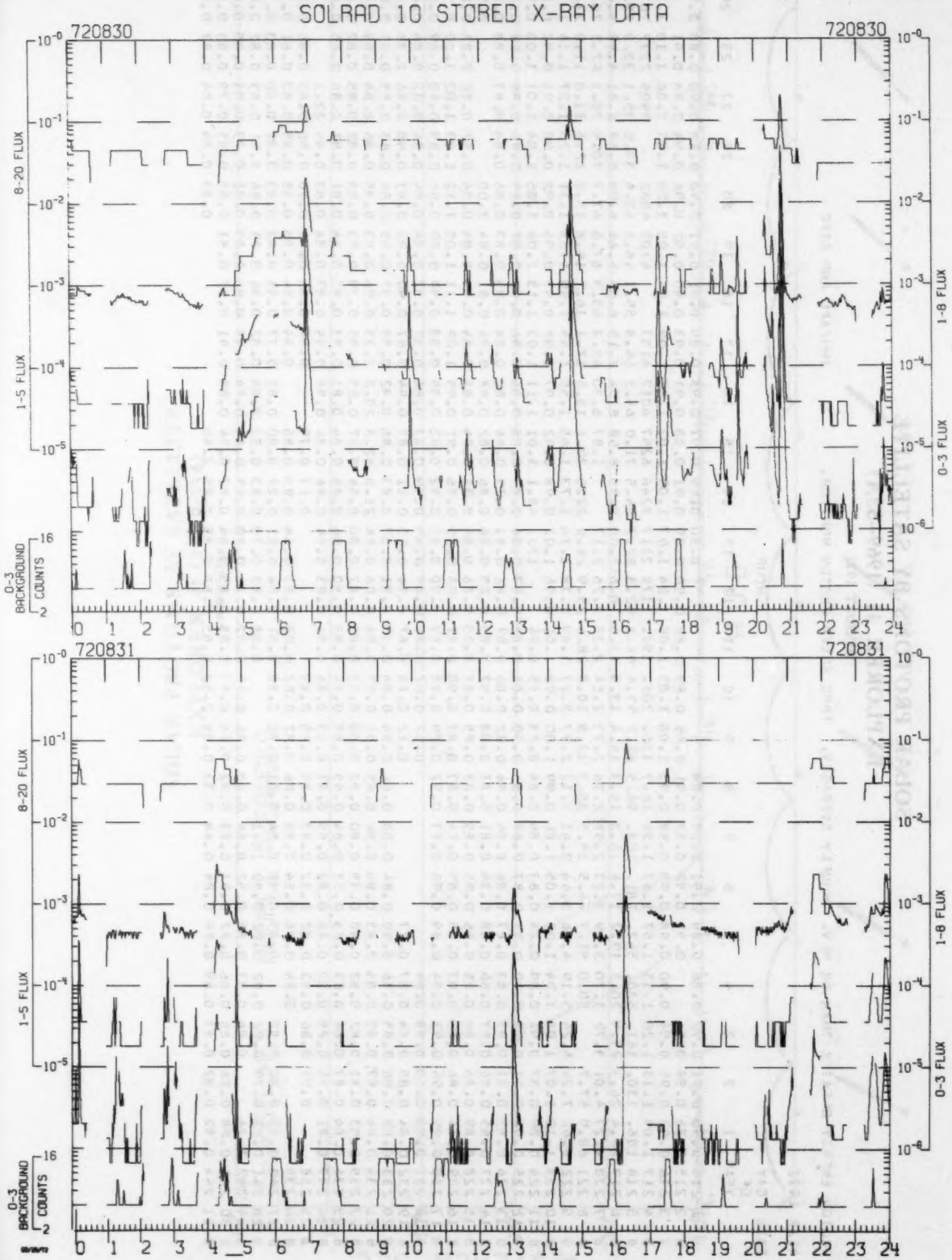





SOLRAD 10 STORED X-RAY DATA
720828
720828
8-20 FLUX
1-5 FLUX
1-8 FLUX
0-3 FLUX
0-3 BACKGROUND COUNTS
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
720829
720829
8-20 FLUX
1-5 FLUX
1-8 FLUX
0-3 FLUX
0-3 BACKGROUND COUNTS
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24

SOLRAD 10 STORED X-RAY DATA



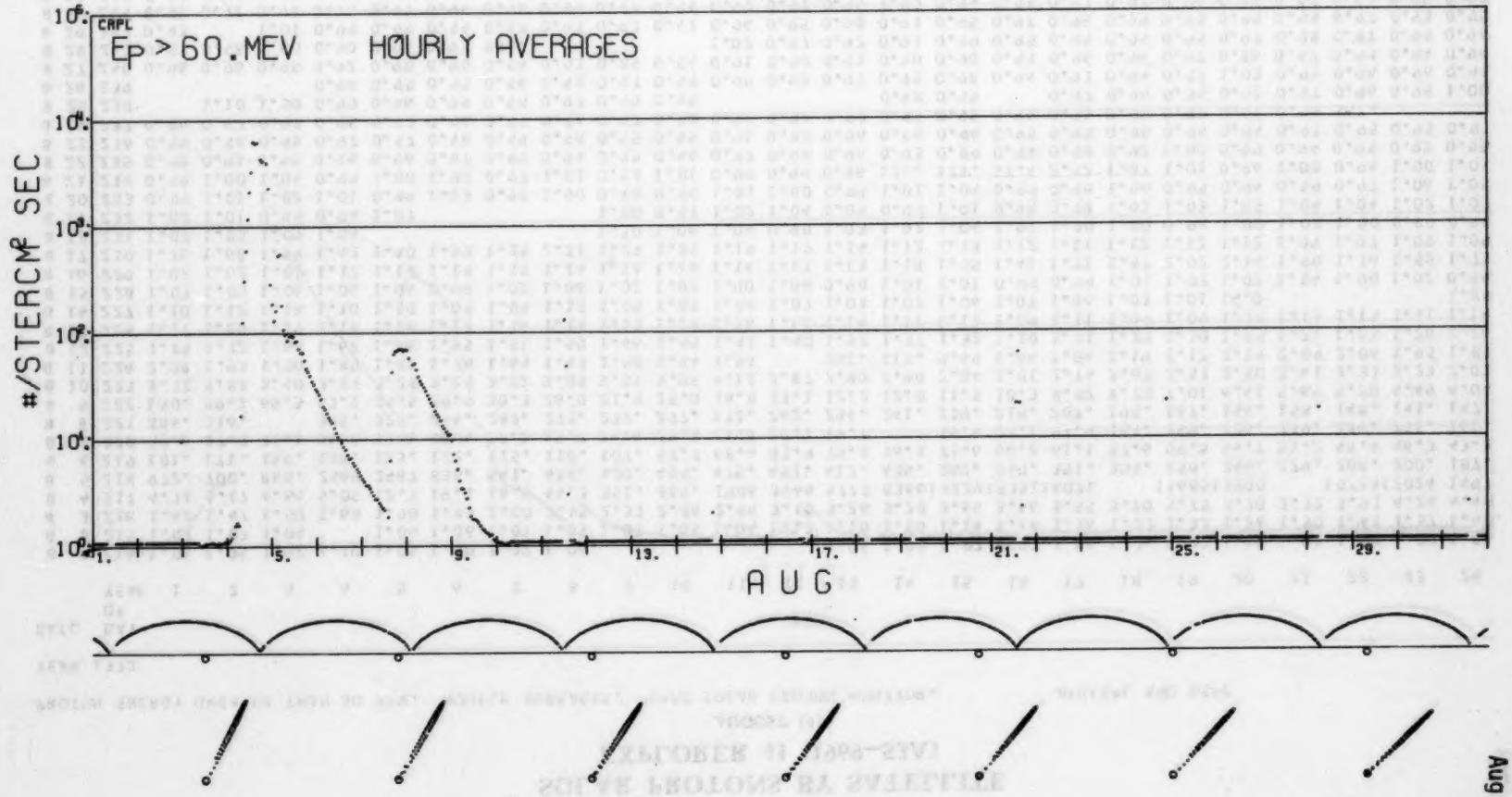
SOLAR PROTONS BY SATELLITE
EXPLORER 41 (1969–53A)
AUGUST 1972

PROTON ENERGY GREATER THAN 60 MEV. HOURLY AVERAGES. IMPG SOLAR PROTON MONITOR. JHU/APL AND GSFC

YEAR 1972

DATE	DAY OF YEAR	HOUR 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
8 1	214	0.90	0.91	0.92	0.86	0.89	0.91	0.89	0.89					0.90	0.89	0.97	0.93	0.89	0.91	0.91	0.90	0.88	0.90	0.88	0.91
8 2	215	0.86	0.89	0.86		0.91	0.92	0.93	0.91	0.85	0.89	0.88	0.90	0.89	0.91	0.88	0.91	0.93	0.90	0.92	0.96	0.94	0.84	0.91	
8 3	216	0.92	0.95	0.94	0.90	0.98	0.98	0.98	0.95	1.00	1.03	1.00	1.04	1.07	1.05	1.07	1.09	1.09	1.06	1.05	1.09	1.07	1.06	1.10	1.11
8 4	217	1.09	1.13	1.20	1.33	1.57	1.67	1.56	16.7	126.	306.	592.	1178	2117	3246	6257	6012	6137		4305	4082		3905	2272	287.
8 5	218	186.	130.	161.	530.	547.	181.	108.	96.5	85.2	93.4	96.4	92.3	82.7	84.5	71.0	65.3	64.8	55.1	46.6	43.4	39.6	35.1	32.9	29.9
8 6	219	28.4	26.3	23.9	20.3	19.2	17.6	16.2	15.3	14.4	12.9	11.6	10.61	0.00	9.35	8.58	8.04	7.15	6.65	6.66	6.08	5.68	5.31	4.98	4.61
8 7	220	4.27	4.01	3.72	3.70	3.49	3.23	2.98	2.76	2.73	2.54	2.38	2.26	2.17		1.87	6.30	42.8	63.3	67.6	67.7	70.5	70.3	67.3	70.3
8 8	221	68.9	57.7		50.0	51.7	44.5	38.8	35.3	32.8	30.8	28.4	25.9	24.0	22.0	20.6	18.4	17.1	16.1	14.8	13.3	12.6	11.8	11.0	11.0
8 9	222	9.62	7.24	6.24	5.19	4.06	3.44	3.41	3.12	2.77	2.27	1.89	1.78	1.76	1.73	1.65	1.55	1.44	1.40	1.33	1.31	1.23	1.27	1.16	1.11
8 10	223	1.10	1.07	1.08	1.04	1.03	1.05	1.01	0.99	1.00	0.98	1.01	0.96	1.02	0.98	0.92	0.97	0.95	0.93	0.96	0.92	0.90	0.91	0.92	0.89
8 11	224	0.89	0.87	0.91	0.89	0.84	0.87	0.86	0.84	0.85	0.85	0.84		130.	48.1	3.01	1.11	1.03	1.13	1.06	1.05	1.04	1.01	1.03	0.97
8 12	225	0.94	0.92	0.93	0.90	0.89	0.87	0.89	0.86	0.90	0.84	0.85	0.87	0.84	0.87	0.88	0.86	0.86	0.82	0.87	0.85	0.86	0.84	0.89	0.83
8 13	226	0.82	0.81	0.83	0.83	0.87	0.86	0.84	0.84	0.82	0.86	0.87	0.82	0.81	0.79	0.84	0.82	0.84	0.85	0.87	0.86	0.84	0.87	0.88	0.83
8 14	227	0.85	0.84	0.87	0.86	0.88	0.84	0.81	0.85	0.88	0.92	0.83	0.85	0.86	0.86	0.82	0.88	0.84	0.81	0.84	2.00				0.96
8 15	228	0.89	0.86	0.86	0.85	0.86	0.85	0.85	0.83	0.85	0.85	0.85	0.86	0.84	0.81	0.84	0.84	0.84	0.84	0.84	0.84	0.82	0.86	0.83	0.87
8 16	229	0.84	0.86	0.85	0.87	0.85	0.89	0.84	0.87	0.87	0.90	0.87	0.83	0.85	0.86	0.91	0.95	1.09	1.11	1.09	1.12	1.03	1.02	1.00	0.98
8 17	230	0.95	0.96	0.93	0.94	0.89	0.93	0.87	0.92	0.89	0.88	0.87	0.90	0.85	0.92	0.92	0.89	0.88	0.88	0.89	0.88	0.89	0.90	0.89	0.87
8 18	231	0.90	0.88	0.85	0.89					0.97	0.87	0.84	0.89	0.85	0.89	0.87	0.86	0.82	0.82	0.84	0.84	0.86	0.82	0.84	0.85
8 19	232	0.84	0.85	0.84	0.87	0.77				0.82	0.86	0.87	0.94	0.85	0.81	0.87	0.84	0.87	0.90	0.85	0.87	0.90	0.86	0.86	0.87
8 20	233	0.88	0.86	0.85	0.86	0.89	0.84	0.88	0.86	0.84	0.84	0.85	0.81	0.87	0.83	0.86	0.82	0.88	0.87	0.85	0.84	0.83	0.83	0.83	0.87
8 21	234	0.84	0.87	0.85	0.84	0.85	0.86	0.86	0.85	0.81	0.83	0.84	0.86	0.84	21.0	62.8	20.8	2.23	0.94	0.83	0.85	0.86	0.84	0.83	0.82
8 22	235	0.83	0.81	0.82	0.82	0.80	0.85	0.80	0.82	0.80	0.83	0.85	0.82	0.80	0.84	0.87	0.85	0.90	0.79	0.83	0.83	0.82	0.85	0.82	0.82
8 23	236	0.84	0.87	0.84	0.83	0.85	0.82	0.84	0.85	0.85	0.84	0.83	0.80	0.86	0.84	0.84	0.81	0.83	0.82	0.84	0.81	0.83	0.84	0.85	0.84
8 24	237	0.81	0.84	0.85	0.82	0.86	0.82	0.85	0.81	0.83	0.84	0.84	0.83	0.84	0.86	0.86	0.86	0.84	0.83	0.84	0.83	0.85	22.1		
8 25	238		0.92	0.86	0.83	0.82	0.82	0.82	0.85	0.85	0.89				0.87	0.79		0.80	0.85	0.84	0.86	0.86	0.82	0.86	0.82
8 26	239				0.86	0.86	0.84	0.88	0.86	0.82	0.82	0.85	0.83	0.84	0.85	0.86		0.84	0.84	0.85	0.85	0.85	0.82	0.81	0.79
8 27	240	0.83	0.80	0.82		0.83	0.80	0.84	0.81	0.80	0.80	0.81	0.84	0.81	0.82	0.80	0.82	0.77	0.83	0.82	0.83	0.82	0.80	0.83	0.79
8 28	241	0.82	0.79	0.82	0.82	0.82	0.82	18.1				0.88	0.83	0.79	0.83	0.82	0.84	0.82	0.84	0.83	0.84	0.81	0.83	0.82	0.84
8 29	242	0.84		0.86	0.87	0.83	0.82	0.84	0.80	0.86	0.85	0.82	0.83	0.80	0.85	0.84	0.84	0.85	0.84	0.85	0.81	0.83	0.81	0.85	0.85
8 30	243	0.88	0.86	0.86	0.86	0.82	0.81	0.83	0.82	0.84	0.87	0.85	0.85	0.84	0.82	0.84	0.83	0.81	0.87	0.81	0.85	0.85	0.79	0.83	0.81
8 31	244	0.82	0.82	0.83	0.89	0.86	0.84	0.88	0.83	0.84	0.83	0.85	0.85	0.85	0.85	2.40					0.83	0.84	0.84	0.87	0.85

SOLAR PROTONS BY SATELLITE
EXPLORER 41 (1969-53A)
AUGUST 1972



87
Aug 72

SOLAR PROTONS BY SATELLITE
EXPLORER 41 (1969-53A)

AUGUST 1972

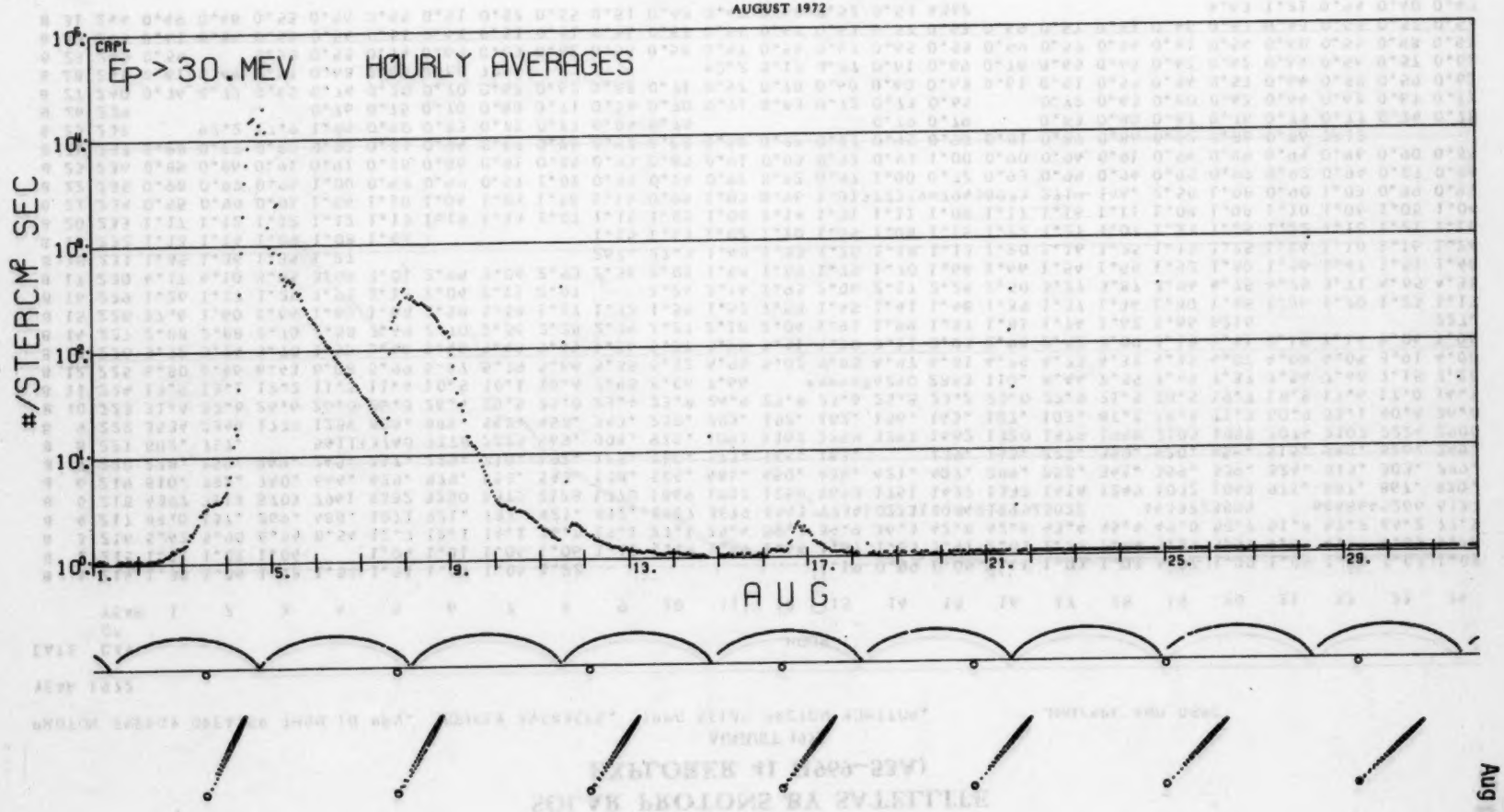
PROTON ENERGY GREATER THAN 30 MEV. HOUPLY AVERAGES. IMPG SOLAR PROTON MONITOR. JHU/APL AND GSFC

YEAR 1972

DATE	DAY OF YEAR	HOUR 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
8 1	214	1.04	1.05	1.07	1.10	1.05	1.00	1.02	1.04					1.01	1.05	1.07	1.07	1.04	1.04	1.07	1.09	1.03	1.03	1.08	1.03
8 2	215	1.07	1.07	1.04		1.04	1.06	1.03	1.08	1.07	1.08	1.04	1.12	1.10	1.10	1.14	1.18	1.16	1.22	1.32	1.26	1.30	1.41	1.37	1.40
8 3	216	1.42	1.47	1.50	1.68	1.90	1.83	2.00	2.15	2.33	2.84	2.84	3.15	3.26	3.28	3.66	3.56	3.55	3.70	3.75	3.70	3.72	3.91	4.24	4.46
8 4	217	4.71	5.67	6.64	9.05	12.7	19.1	16.5	44.3	351.	869.	1906	3544	5773	8366	14829	15351	16021		11685	13900		19733	12024	1497
8 5	218	972.	700.	865.	2369	2487	836.	541.	486.	420.	459.	475.	451.	412.	435.	360.	340.	351.	304.	258.	246.	229.	208.	200.	187.
8 6	219	181.	171.	159.	138.	133.	122.	115.	110.	107.	97.7	88.4	83.9	79.8	76.3	71.6	66.8	61.1	57.6	59.5	54.7	51.2	48.4	46.3	43.2
8 7	220	40.6	37.7	36.1	34.8	33.1	30.4	28.2	25.7	24.4	23.2	21.8	20.7	19.7		16.6	23.1	93.4	164.	189.	206.	239.	274.	291.	361.
8 8	221	384.	316.		305.	322.	294.	282.	273.	272.	277.	272.	262.	254.	241.	239.	218.	207.	198.	187.	164.	158.	148.	141.	147.
8 9	222	130.	89.3	69.3	53.1	38.5	29.9	30.3	26.0	21.3	15.0	14.8	13.1	12.2	12.0	11.5	10.3	8.82	7.70	7.01	6.41	5.69	5.20	4.49	4.04
8 10	223	3.72	3.52	3.40	3.24	3.28	3.29	3.22	3.09	3.01	3.05	3.12	2.87	2.90	2.90	2.84	2.81	2.74	2.67	2.53	2.50	2.41	2.31	2.23	2.03
8 11	224	2.08	1.93	1.90	1.89	1.82	1.76	1.65	1.63	1.58	1.54	1.54		382.	113.	5.45	1.84	2.04	2.19	2.12	2.19	2.09	2.06	1.95	1.87
8 12	225	1.85	1.72	1.68	1.62	1.66	1.55	1.51	1.50	1.46	1.45	1.41	1.40	1.37	1.37	1.32	1.30	1.31	1.29	1.30	1.23	1.21	1.23	1.28	1.24
8 13	226	1.17	1.25	1.19	1.18	1.16	1.18	1.16	1.14	1.15	1.18	1.16	1.16	1.14	1.17	1.13	1.09	1.11	1.09	1.09	1.08	1.13	1.13	1.11	1.14
8 14	227	1.10	1.12	1.14	1.10	1.10	1.09	1.09	1.13	1.09	1.05	1.06	1.07	1.03	1.07	1.04	1.07	1.06	1.03	1.01	14.0				1.25
8 15	228	1.07	1.05	1.06	1.06	1.04	0.99	1.03	1.06	1.02	1.02	1.00	1.06	0.98	1.01	1.01	0.99	0.98	1.01	1.02	1.02	1.04	1.00	1.02	0.99
8 16	229	1.02	1.02	1.01	1.12	1.18	1.18	1.18	1.14	1.16	1.16	1.16	1.13	1.13	1.18	1.35	1.41	1.71	1.87	2.02	2.14	1.90	1.76	1.95	1.75
8 17	230	1.76	1.68	1.59	1.42	1.40	1.33	1.35	1.31	1.29	1.23	1.19	1.19	1.14	1.12	1.13	1.12	1.11	1.12	1.12	1.12	1.09	1.07	1.09	1.09
8 18	231	1.07	1.05	1.09	1.04					1.30	1.06	1.04	0.99	1.03	1.02	1.06	1.01	1.00	1.00	0.98	1.00	1.02	1.00	0.99	0.99
8 19	232	1.02	1.01	0.99	0.94	1.07				1.00	0.97	1.02	1.04	1.03	0.99	1.01	0.98	0.98	1.01	1.03	1.03	1.04	1.04	1.02	1.03
8 20	233	0.99	1.01	1.02	1.01	0.99	1.03	0.98	1.00	0.98	0.99	1.01	1.00	0.95	1.01	1.04	0.99	0.98	1.04	0.99	0.94	0.99	0.97	1.06	1.05
8 21	234	0.99	1.00	1.04	0.99	1.00	1.02	0.97	1.01	0.96	1.01	0.99	0.99	0.96	131.	323.	37.8	2.92	1.07	1.01	0.96	1.00	0.94	1.00	1.01
8 22	235	0.98	0.93	0.95	0.96	0.96	0.97	0.99	0.94	0.95	0.94	0.92	0.96	0.96	0.93	0.89	0.94	0.98	0.92	1.00	0.99	0.94	0.95	0.95	0.95
8 23	236	0.99	0.96	0.95	0.97	0.97	0.96	0.95	0.98	0.95	0.95	0.96	0.96	0.94	0.96	0.94	0.95	0.95	0.96	0.94	0.94	0.97	0.95	0.95	0.97
8 24	237	0.96	0.97	0.92	0.95	0.97	0.96	0.97	0.96	0.97	0.94	0.96	0.96	0.98	0.95	0.95	0.96	0.96	0.97	0.97	0.97	0.96	361.		
8 25	238		1.10	1.00	0.99	0.96	0.99	0.98	0.97	0.99	0.95				0.98	0.95		0.97	0.94	0.98	0.92	0.97	0.96	0.98	1.00
8 26	239				0.94	0.95	0.95	0.96	0.98	0.97	0.98	0.98	0.98	0.97	0.95	0.98	0.94	0.93	0.94	0.97	1.03	0.95	0.96	0.96	0.91
8 27	240	0.96	0.96	0.95	0.92	0.98	0.96	0.94	0.93	0.89	0.94	0.91	0.90	0.93	0.90	0.90	0.93	0.96	0.94	0.92	0.96	0.97	0.93	0.94	0.94
8 28	241	0.93	0.96	1.00	0.90	0.94	0.93	896.				1.02	0.97	0.92	0.93	0.99	0.95	0.95	0.95	0.95	0.97	0.98	0.97	0.95	0.96
8 29	242	0.93		1.01	0.99	0.99	0.94	0.97	0.97	0.97	0.97	0.94	0.95	0.90	0.93	0.95	0.97	0.98	0.99	0.95	0.95	0.98	0.97	0.93	0.95
8 30	243	0.93	0.97	0.99	0.95	0.97	0.94	0.96	0.95	0.97	0.94	0.97	0.97	0.95	1.00	0.94	0.98	0.97	0.97	0.94	0.99	0.97	0.94	0.95	0.96
8 31	244	0.95	0.94	0.94	0.97	0.93	0.96	0.97	0.98	0.94	1.00	0.97	0.96	0.95	0.96	42.1					0.93	0.97	0.95	0.95	0.98

SOLAR PROTONS BY SATELLITE
EXPLORER 41 (1969-53A)

AUGUST 1972



SOLAR PROTONS BY SATELLITE
EXPLORER 41 (1969–53A)

AUGUST 1972

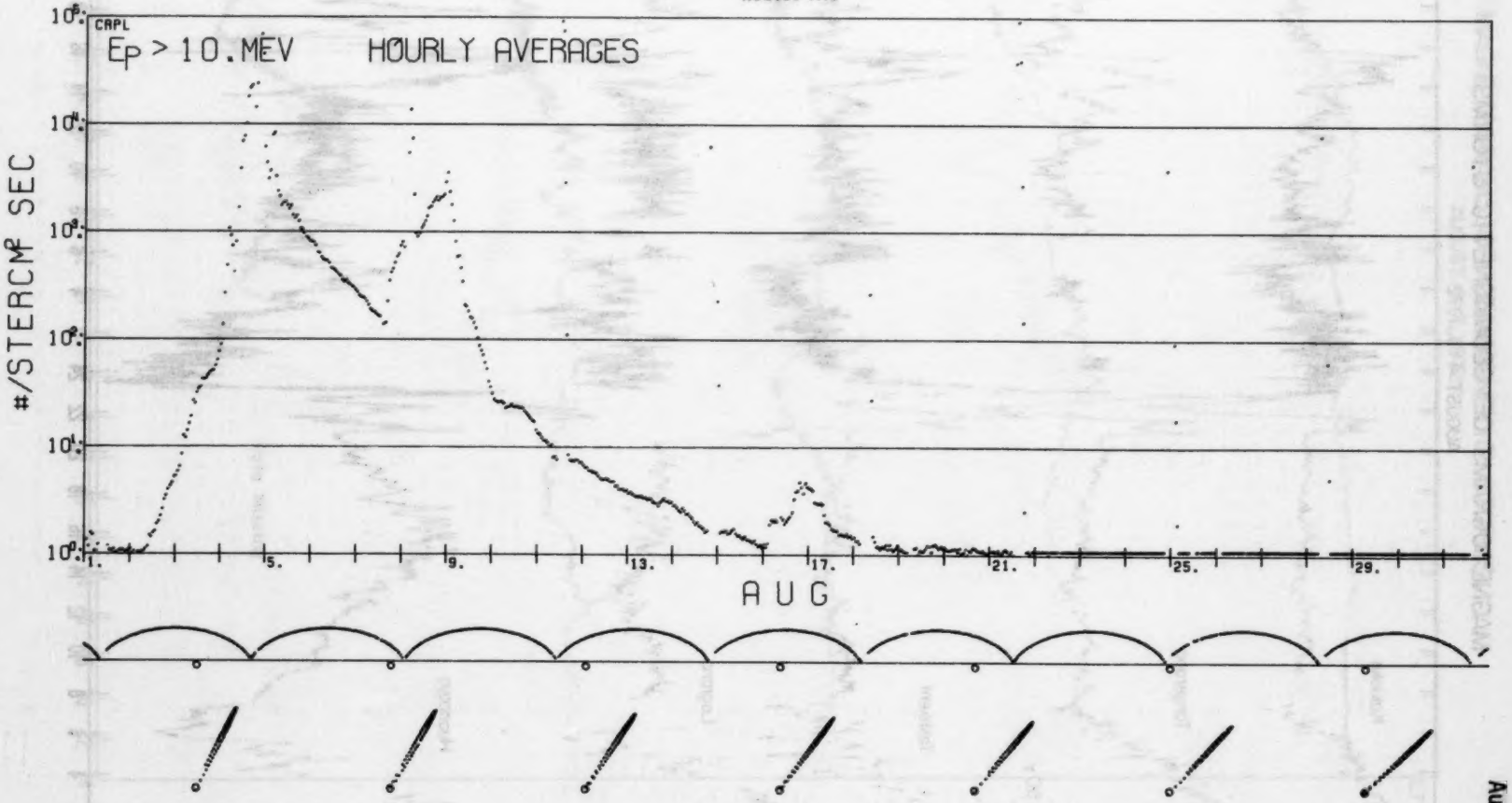
PROTON ENERGY GREATER THAN 10 MEV. HOURLY AVERAGES. IMPC SOLAR PROTON MONITOR. JHU/APL AND GSFC

YEAR 1972

DATE	DAY OF YEAR	HOUR 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
8 1	214	1.35	1.36	1.18	1.58	1.51	1.07	1.06	1.22					1.19	0.99	1.05	1.11	1.03	1.03	1.07	1.00	1.09	1.04	1.07	1.09
8 2	215	1.11	1.02	1.06		1.04	1.01	1.06	1.06	1.12	1.18	1.49	1.44	1.57	1.63	1.91	2.01	2.27	2.64	3.23	3.53	4.03	4.33	4.65	5.28
8 3	216	5.43	5.90	6.54	8.54	12.7	12.1	14.1	16.5	19.1	27.1	25.4	32.3	34.9	36.3	42.8	42.6	43.4	46.4	49.0	50.7	51.8	57.2	64.2	77.3
8 4	217	89.0	137.	269.	488.	1071	921.	737.	421.	812.	1667	3679	6943	7734	10223	18084	21995	23022		14337	23885		68486	45266	6137
8 5	218	4397	3113	3703	7941	8332	3250	2375	2128	1770	1869	1882	1756	1638	1751	1422	1332	1416	1249	1072	1043	973.	887.	867.	820.
8 6	219	810.	792.	740.	644.	629.	579.	553.	543.	538.	509.	461.	450.	438.	421.	407.	389.	358.	341.	359.	339.	324.	313.	303.	289.
8 7	220	278.	259.	249.	245.	237.	225.	210.	192.	185.	180.	173.	166.	163.		139.	143.	227.	350.	420.	456.	515.	588.	626.	745.
8 8	221	802.	717.		5411	13740	7378	2225	969.	903.	975.	1091	1162	1258	1397	1662	1720	1878	1988	2105	1955	2074	2107	2224	2900
8 9	222	3534	2346	1779	1259	808.	585.	557.	458.	343.	210.	203.	182.	162.	156.	143.	127.	103.	87.7	78.6	71.3	60.9	53.1	40.4	36.0
8 10	223	31.4	27.6	26.6	26.0	26.3	26.4	25.5	23.0	23.4	23.8	24.9	23.8	23.6	23.8	23.2	23.0	22.9	21.5	20.5	19.7	18.5	17.6	17.0	14.3
8 11	224	13.5	13.1	12.2	11.5	11.4	10.9	10.1	10.4	7.98	8.06	7.66		*****	74290	2883	110.	8.44	7.55	7.43	7.37	7.54	7.46	7.15	7.20
8 12	225	6.80	6.46	6.43	6.08	5.99	5.87	5.79	5.66	5.35	5.12	4.96	5.02	5.05	4.97	4.81	4.75	4.73	4.33	4.35	4.07	4.08	4.05	3.91	4.00
8 13	226	3.72	3.84	3.70	3.55	3.48	3.46	3.48	3.49	3.36	3.37	3.25	3.31	3.30	3.11	3.03	2.98	2.82	3.09	3.18	3.31	3.15	3.14	3.04	3.06
8 14	227	2.88	2.88	2.73	2.58	2.49	2.70	2.56	2.38	2.35	2.27	2.18	2.04	1.91	1.99	1.87	1.81	1.74	1.62	1.66	6216				227.
8 15	228	37.6	1.60	1.64	1.63	1.68	1.58	1.58	1.67	1.72	1.59	1.52	1.53	1.45	1.41	1.48	1.39	1.37	1.34	1.30	1.36	1.26	1.20	1.23	1.17
8 16	229	1.26	1.17	1.29	1.91	2.12	2.04	2.11	2.03		2.24	2.14	1.93	2.06	2.17	2.28	2.50	3.27	3.87	3.94	4.75	4.25	3.71	4.65	4.31
8 17	230	4.17	4.10	3.95	3.08	3.01	2.95	3.04	2.93	2.36	2.01	1.98	1.89	1.75	1.70	1.68	1.66	1.54	1.55	1.52	1.50	1.56	1.47	1.51	1.42
8 18	231	1.45	1.36	1.35	1.27					267.	27.3	1.48	1.33	1.20	1.18	1.13	1.20	1.16	1.25	1.13	1.25	1.14	1.10	1.16	1.24
8 19	232	1.13	1.14	1.09	1.08	1.06				1.15	1.17	1.02	1.10	1.09	1.08	1.15	1.22	1.21	1.07	1.23	1.25	1.22	1.16	1.21	1.16
8 20	233	1.17	1.12	1.12	1.12	1.13	1.15	1.13	1.07	1.15	1.05	1.06	1.14	1.01	1.11	1.09	1.17	1.16	1.11	1.09	1.08	1.10	1.06	1.05	1.04
8 21	234	0.95	0.99	0.93	1.06	1.10	1.04	1.03	1.10	1.13	0.95	1.03	0.96	1.01	3773	2947	9438	973	2719	146.	2.55	1.08	0.90	1.03	0.99	0.97
8 22	235	0.98	0.97	0.96	1.00	0.98	0.99	0.97	1.01	0.93	0.84	0.92	0.92	0.87	1.00	0.72	0.93	0.95	0.94	0.95	0.92	0.92	0.94	0.87	0.86
8 23	236	0.85	0.86	0.91	0.91	0.88	0.86	0.91	0.89	0.93	0.89	0.91	0.93	0.92	0.93	1.00	0.90	0.94	0.91	0.94	0.89	0.94	0.86	0.90	0.85
8 24	237	0.88	0.87	0.89	0.83	0.84	0.94	0.87	0.86	0.87	0.88	0.88	0.83	0.87	0.95	0.90	0.81	0.87	0.96	0.82	0.86	0.86	3812		
8 25	238		92.2	17.9	1.94	0.80	0.83	0.81	0.87	0.84	0.79				0.79	0.79		0.83	0.80	0.87	0.76	0.73	0.77	0.74	0.78
8 26	239				0.76	0.75	0.70	0.80	0.71	0.74	0.70	0.71	0.83	0.72	0.73	0.65		0.72	0.63	0.60	0.62	0.64	0.68	0.67	0.73
8 27	240	0.74	0.72	0.65	0.76	0.70	0.70	0.67	0.62	0.68	0.71	0.57	0.70	0.60	0.60	0.63	0.61	0.51	0.55	0.54	0.57	0.64	0.58	0.59	0.62
8 28	241	0.61	0.68	0.57	0.68	0.65	0.66	7954				62.2	5.13	0.87	0.61	0.69	0.78	0.65	0.63	0.67	0.62	0.64	0.56	0.57	0.62
8 29	242	0.59		0.58	0.58	0.54	0.63	0.63	0.62	0.58	0.58	0.57	0.55	0.67	0.65	0.53	0.59	0.57	0.54	0.61	0.54	0.60	0.55	0.58	0.51
8 30	243	0.61	0.54	0.53	0.56	0.51	0.51	0.51	0.51	0.56	0.53	0.54	0.47	0.53	0.57	0.53	0.49	0.57	0.51	0.46	0.57	0.43	0.55	0.51	0.56
8 31	244	0.49	0.48	0.53	0.56	0.55	0.51	0.52	0.55	0.51	0.48	0.49	0.48	0.52	0.53	4362					4.63	1.21	0.54	0.40	0.47

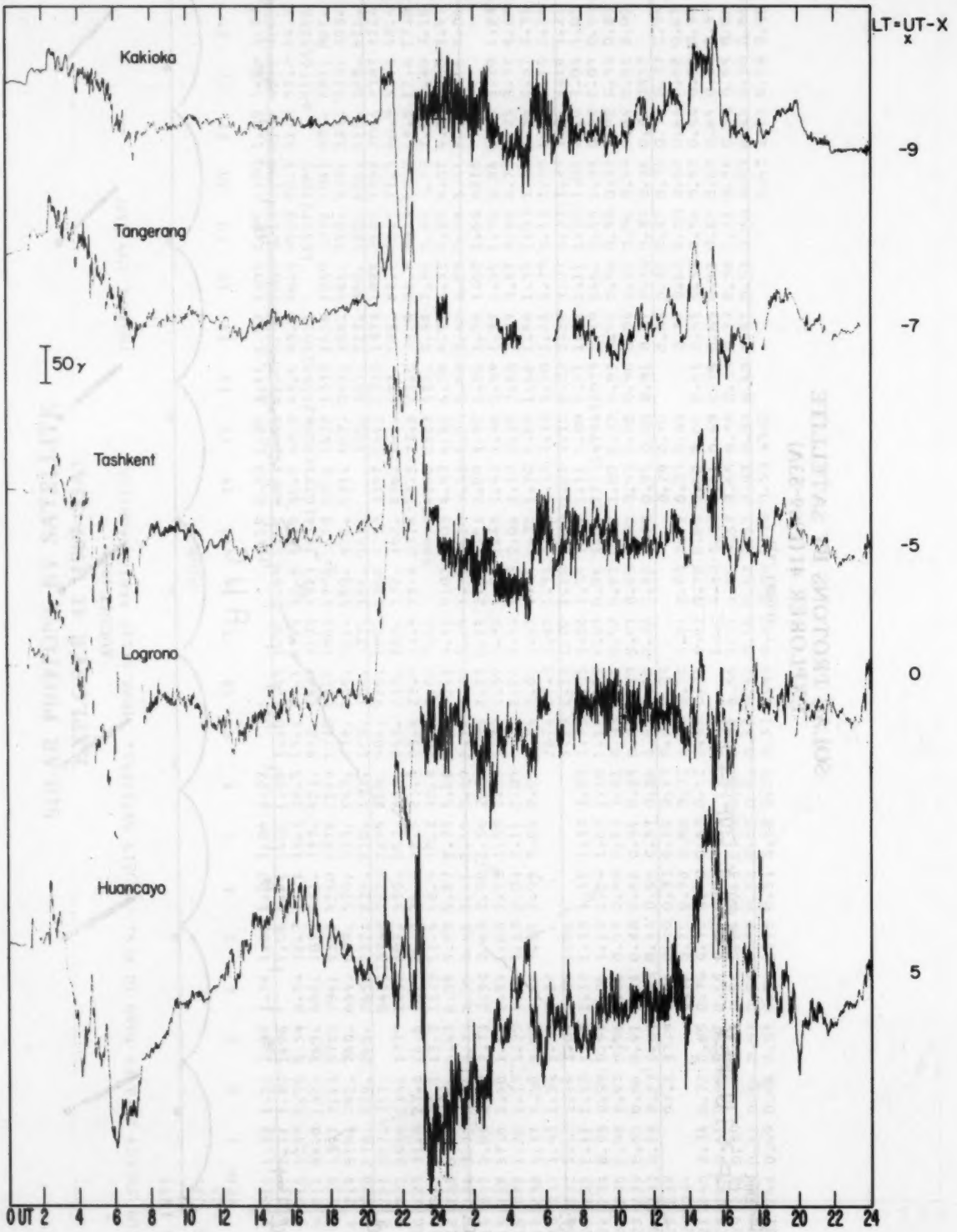
SOLAR PROTONS BY SATELLITE
EXPLORER 41 (1969-53A)

AUGUST 1972



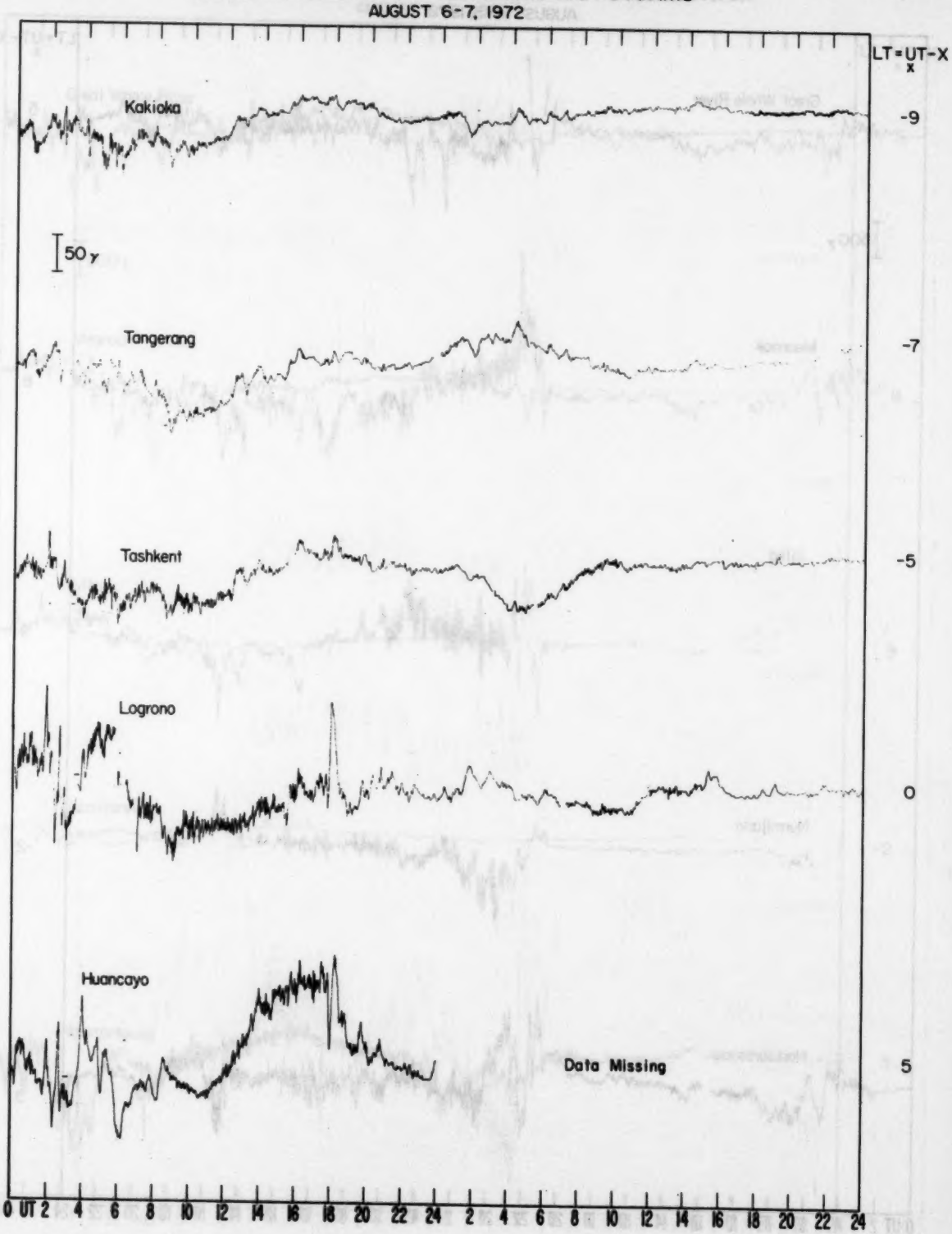
MAGNETOGRAMS OF GEOMAGNETIC STORMS

AUGUST 4-5, 1972



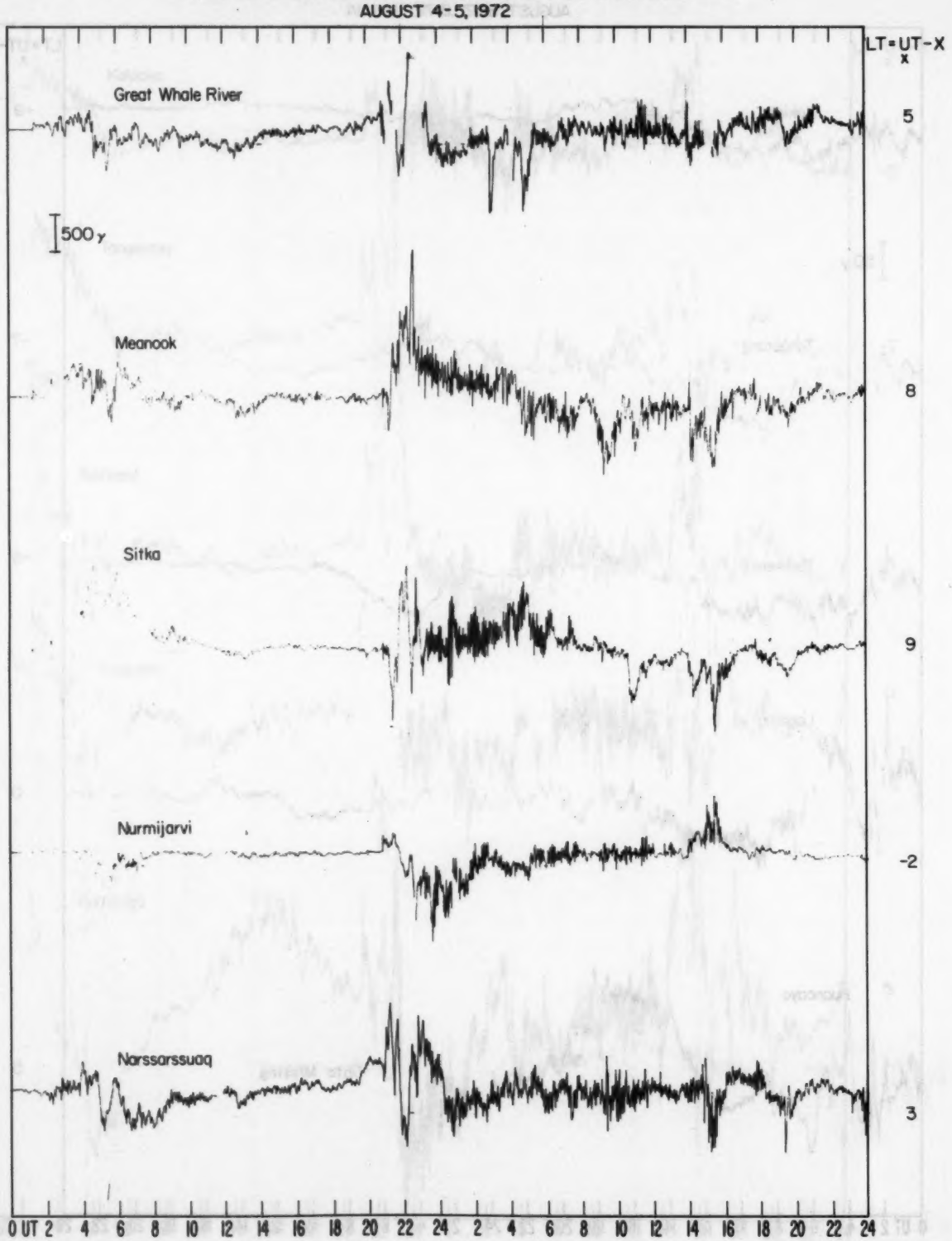
MAGNETOGRAMS OF GEOMAGNETIC STORMS

AUGUST 6-7, 1972



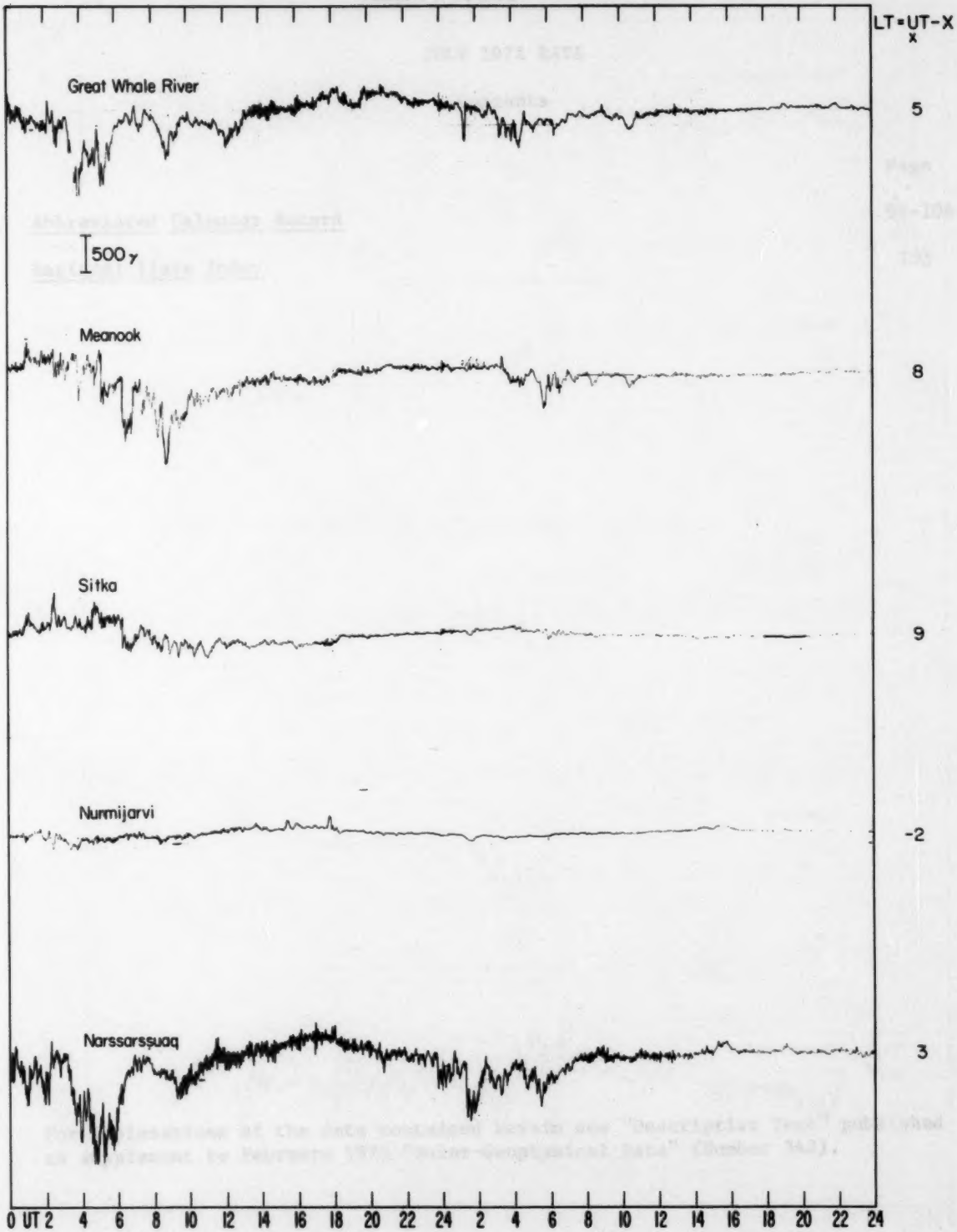
MAGNETOGRAMS OF GEOMAGNETIC STORMS

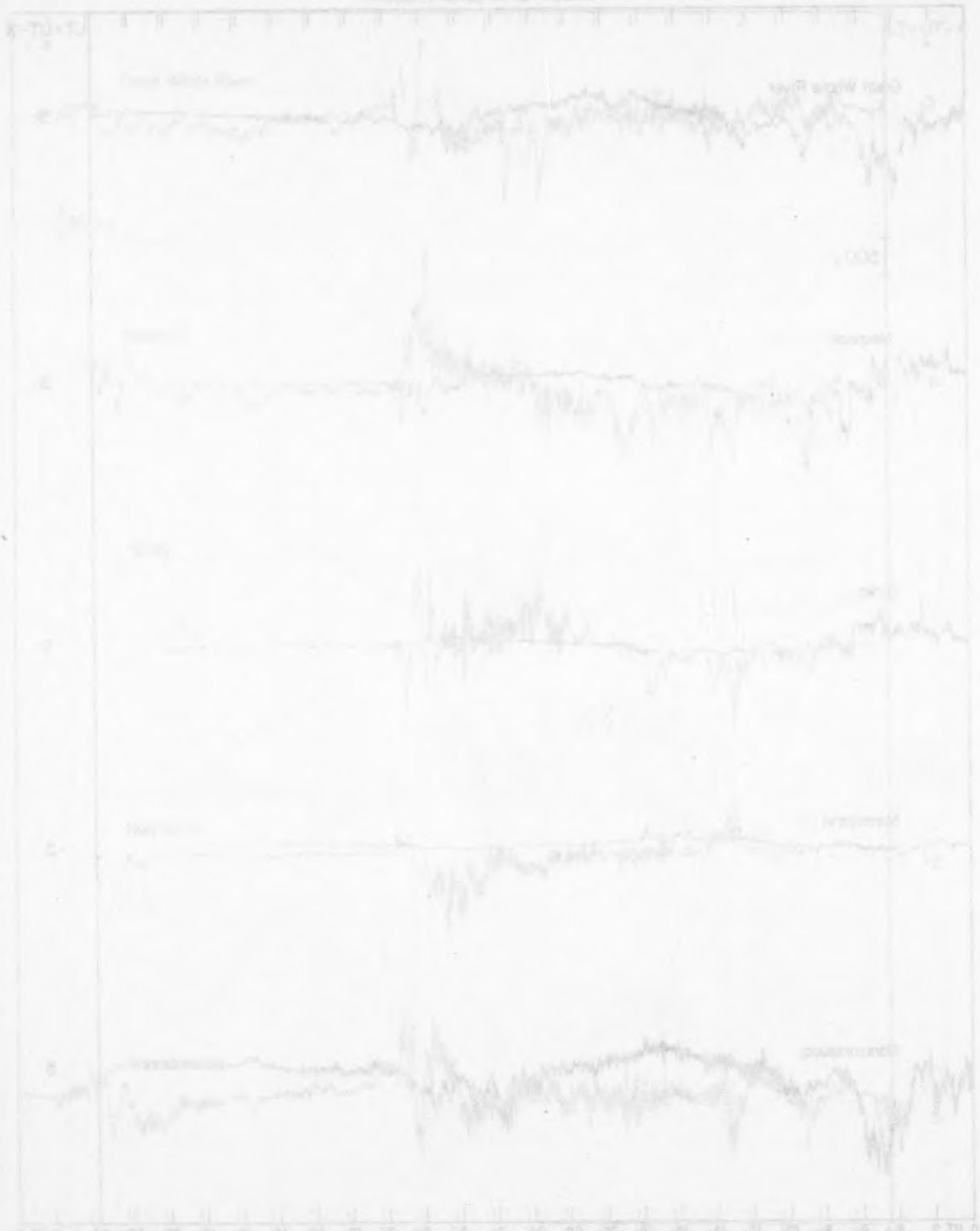
AUGUST 4-5, 1972



MAGNETOGRAMS OF GEOMAGNETIC STORMS

AUGUST 6-7, 1972





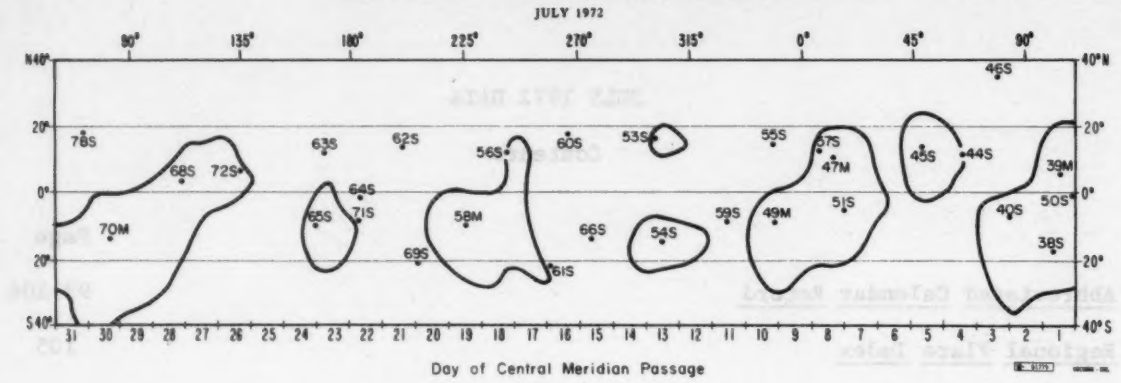
JULY 1972 DATA

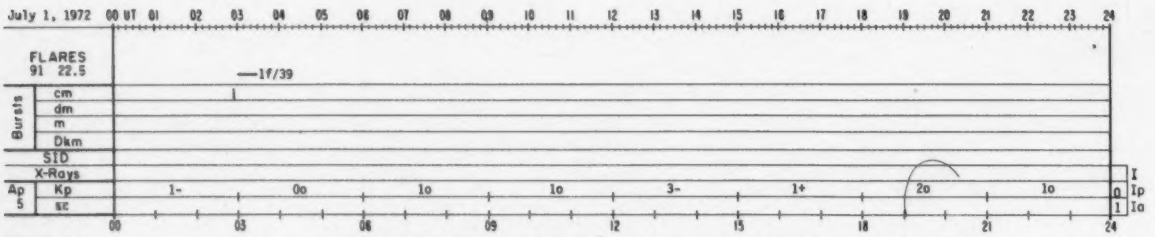
Contents

	Page
Abbreviated Calendar Record	98-104
Regional Flare Index	105

For explanations of the data contained herein see "Descriptive Text" published as supplement to February 1973 "Solar-Geophysical Data" (Number 342).

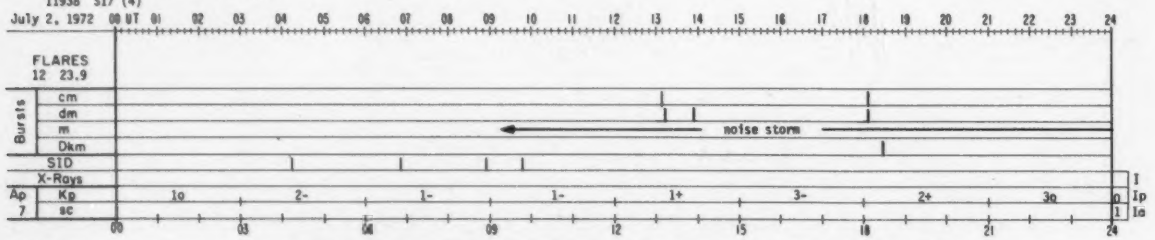
ABBREVIATED CALENDAR RECORD





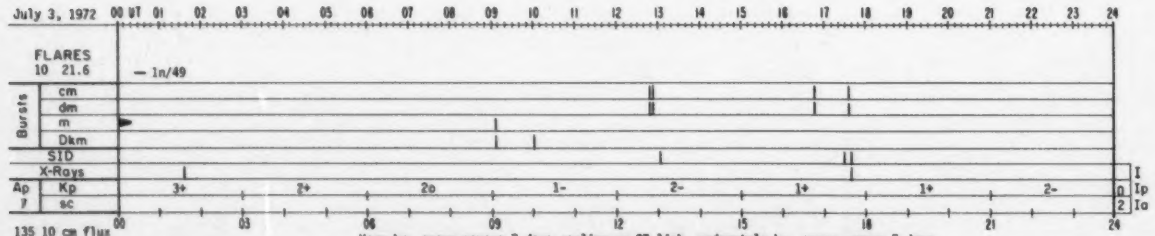
129 10 cm flux
68 Rz
CMP (11950) N00
11939 N07 (3)
11938 S17 (4)
(18992) S01 (βp)3
18881 N07 (βp)5
18883 N09 (βp)4
18884 N04 (βp 2

One of ten most magnetically quiet days; very br. green corona 7 days earlier on NE limb, br. green corona 7 days earlier on SE limb, no coronal data 7 days later on W. limb.



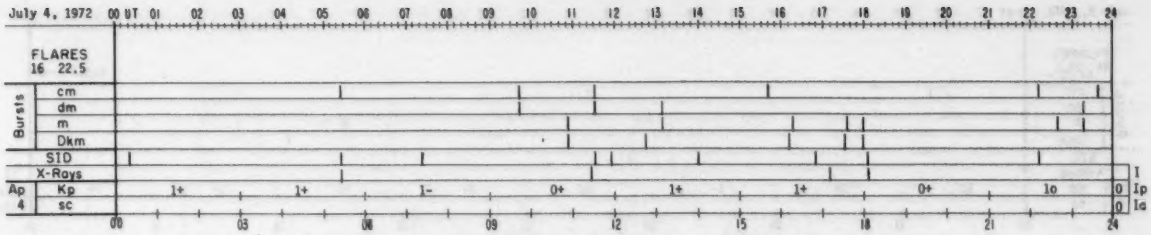
132 10 cm flux
74 Rz

Very br. green corona 7 days earlier on SE limb, br. green corona 7 days earlier on NE limb, no coronal data 7 days later on W. limb.



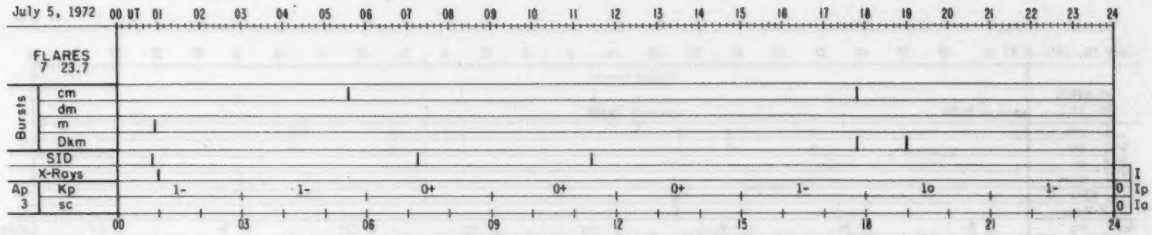
135 10 cm flux
85 Rz
CMP 11940 S07 (2)
11946 N36
18882 S14 (βp)5
18887 S06 (αp)1 CMP July 2
18888 S03 (αp)1 CMP July 2

Very br. green corona 7 days earlier on SE limb, moderately br. green corona 7 days earlier on NE limb, br. green corona 7 days later on SW limb.



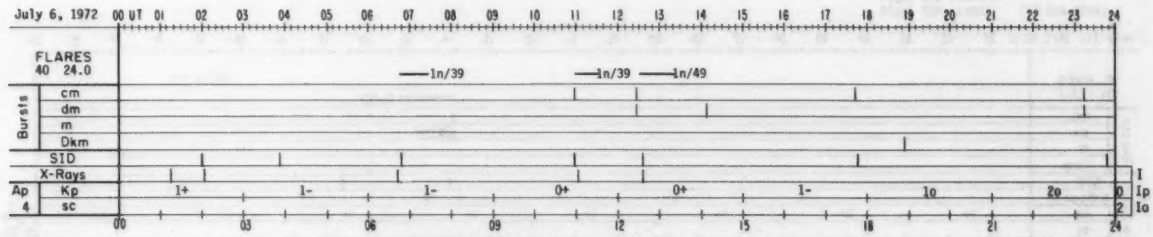
142 10 cm flux
91 Rz
CMP 11944 N12 (2) 18893 N11 (β

One of ten most magnetically quiet days; very br. green corona 7 days earlier on NE and SE limb, moderately br. green corona 7 days later on NW limb.



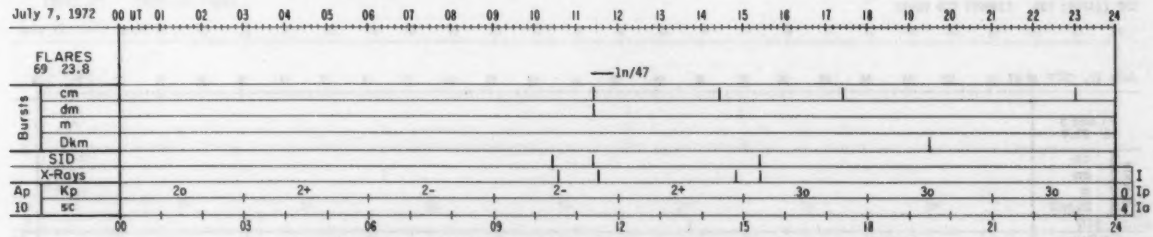
145 10 cm flux
104 Rz
CMP 11945 N14 18886 N13 (βp)3

One of five most magnetically quiet days, extremely quiet 0600-1500; no coronal data 7 days earlier on NE limb, br. green corona 7 days later on NW limb.



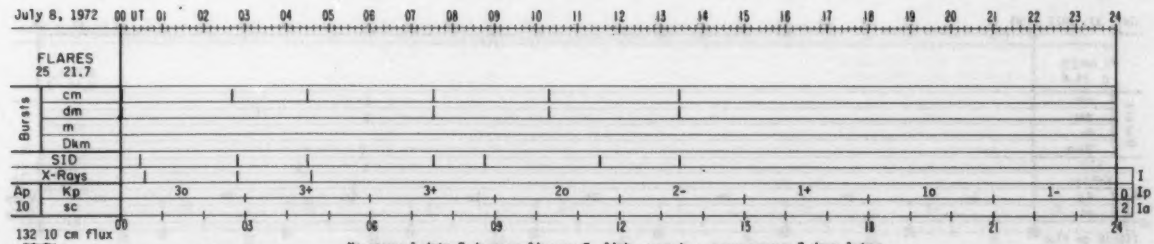
141 10 cm flux
92 Rz

One of ten most magnetically quiet days; no coronal data 7 days earlier on E. limb, br. green corona 7 days later on NW and SW limb.



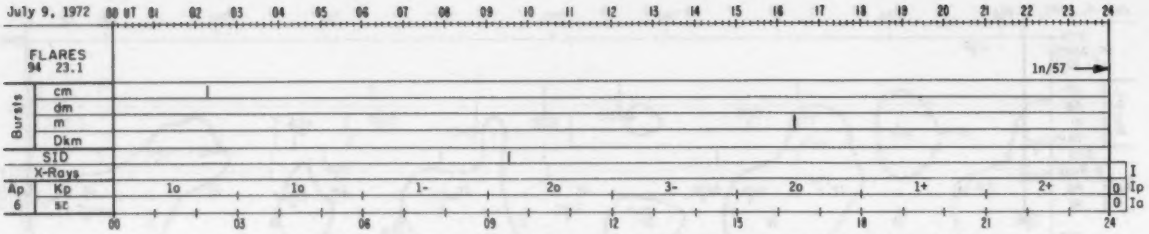
138 10 cm flux
97 Rz

One of five most magnetically disturbed days; very br. green corona 7 days later on NW limb, br. green corona 7 days later on SW limb, moderately br. green corona 7 days earlier on NE and SE limb.



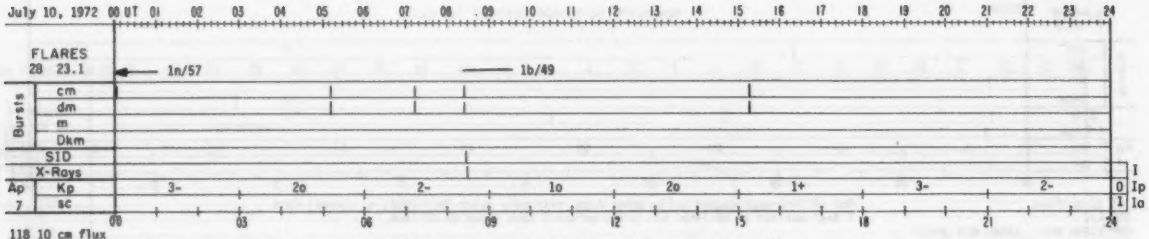
132 10 cm flux
86 Rz
CMP 11951 S04 18895 S04 (βp)3 CMP July 7
18896 S04 (βγ)2
11947 N11 18889 N08 (βp)5
18891 N10 (βγ)2
(11957) N13 (18903) N13 (αp)3

No coronal data 7 days earlier on E. limb, very br. green corona 7 days later on NW and SW limb.



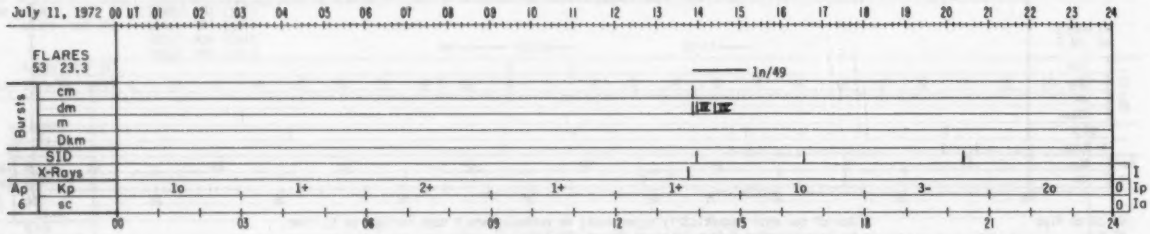
123 10 cm flux
75 Rz

Moderately br. green corona 7 days earlier on NE and SE limb, no coronal data 7 days later on W. limb.



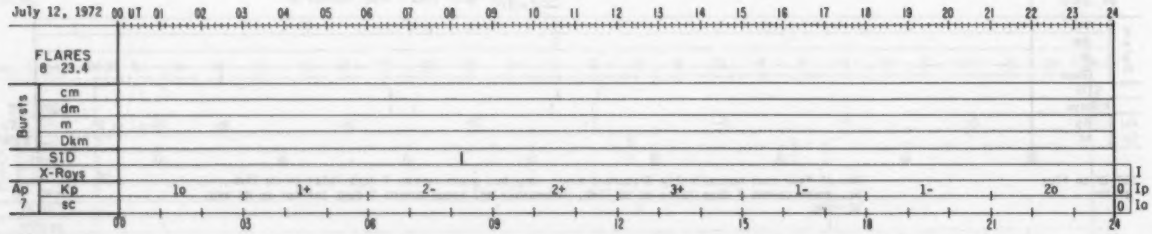
118 10 cm flux
64 Rz
CMP 11949 S08 (2) 18894 S10 (βf)4 CMP July 9
18897 S15 β
(18906) S14 (βp)2
11955 N15 (7) 18901 N07 (βp)2

Moderately br. green corona 7 days earlier on NE and SE limb, no coronal data 7 days later on W. limb.



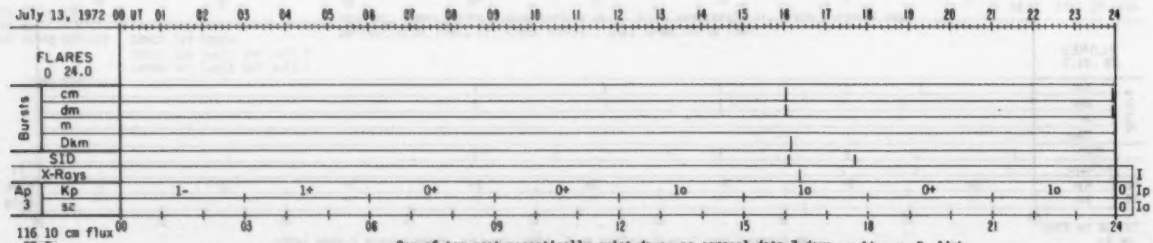
120 10 cm flux
62 Rz
CMP (11959) S08 (18907) S09 (βf)4

Moderately br. green corona 7 days later on NE and SE limb, no coronal data 7 days later on W. limb.



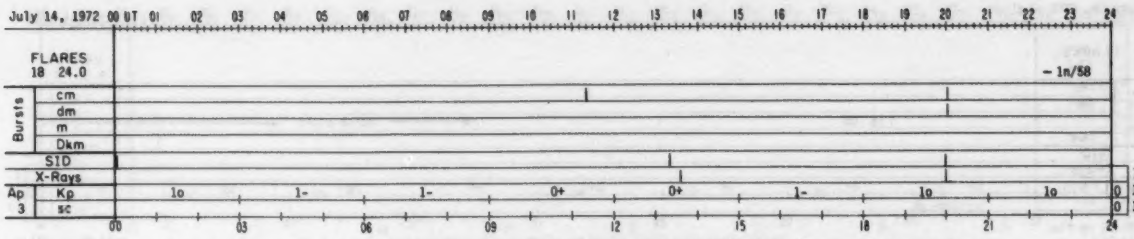
116 10 cm flux
77 Rz

Br. green corona 7 days earlier on SE limb, moderately br. green corona 7 days later on NW and SW limb.



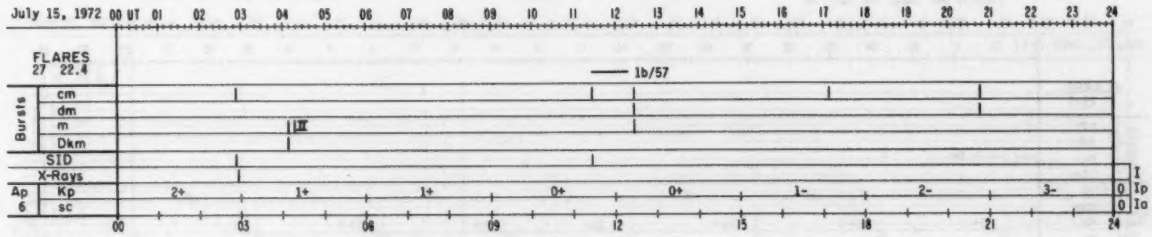
116 10 cm flux
89 Rz
CMP 11954 S14 (4) 18900 S12 (αp)4 CMP July 14
(18902) S16 (αp)1 CMP July 12
11953 N17 (4) 18898 N16 αp
(18899) N19 α
(18912) N20 CMP July 14

One of ten most magnetically quiet days; no coronal data 7 days earlier on E. limb, br. green corona 7 days later on NW limb, moderately br. green corona 7 days later on SW limb.



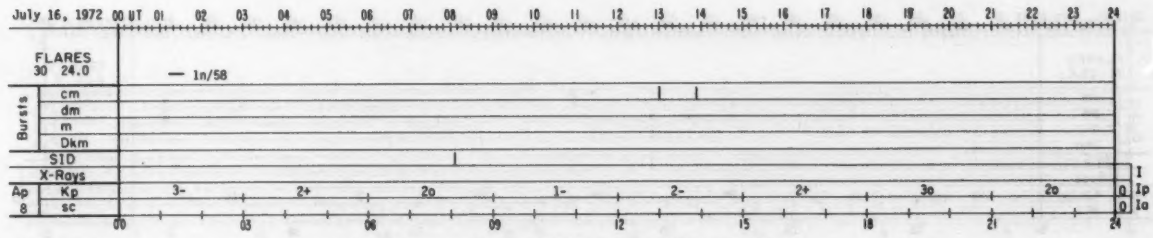
116 10 cm flux
86 Rz

One of ten most magnetically quiet days; moderately br. green corona 7 days earlier on NE limb, no coronal data 7 days later on W. limb.



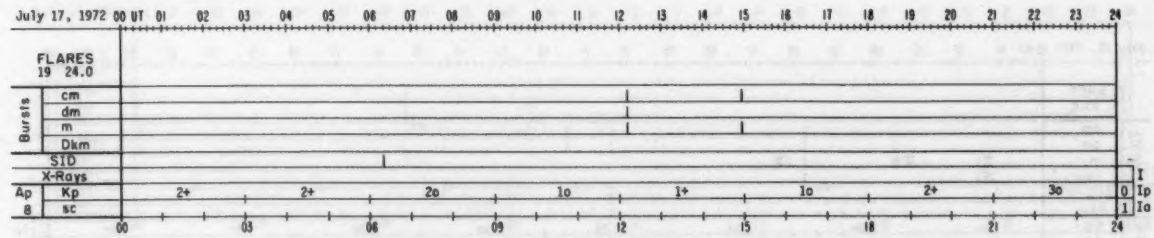
114 10 cm flux
61 Rz
CMP(11966) S14 (18914) S10 β

No coronal data 7 days earlier on E. limb.



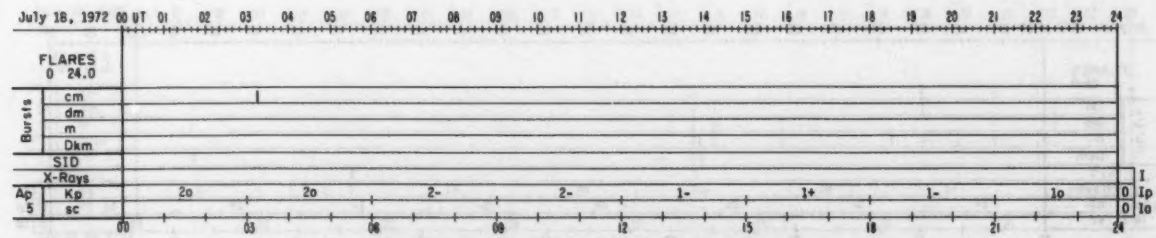
111 10 cm flux
60 Rz
CMP 11960 N17
11961 S22 18909 S24 (βp)3

No coronal data 7 days earlier on E. limb, nor 7 days later on W. limb.



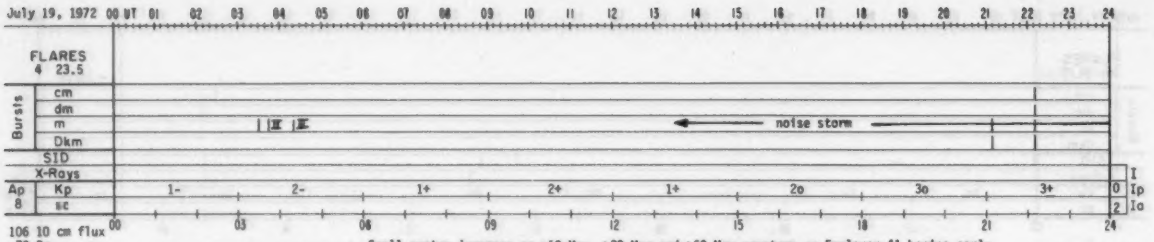
111 10 cm flux
59 Rz

Moderately br. green corona 7 days earlier on NE and SE limb and 7 days later on NW and SW limb.



105 10 cm flux
55 Rz
CMP 11956 N12 (3&1) 18904 N09 (αp)4 CMP July 17
18910 N07 (αp)1 CMP July 17
18911 N13 Bf)2

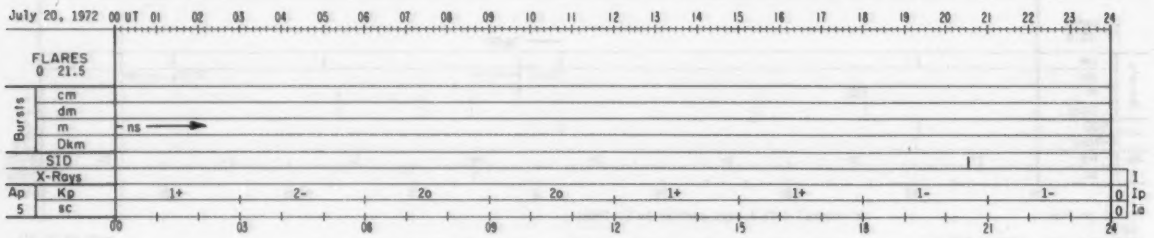
Moderately br. green corona 7 days earlier on NE limb, very br. green corona 7 days later on SW limb and br. green corona 7 days later on NW limb.



106 10 cm flux
73 Rz
CMP 11958 S10 (2)

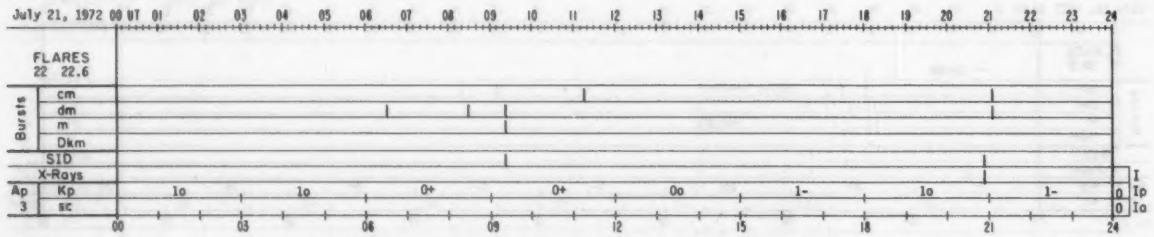
18905 S10 (αp)5 CMP July 18
18908 S09 (βp)5
18913 S12 (βf)2 CMP July 20
(18915) S08 (αp)2 CMP July 18

Small proton increase on >10 Mev, >30 Mev and >60 Mev counters on Explorer 41 begins early in day, reaches a maximum on July 29 and decreases irregularly into August; br. green corona 7 days earlier on SE limb and moderately br. green corona 7 days earlier on NE limb, no coronal data 7 days later on W. limb.



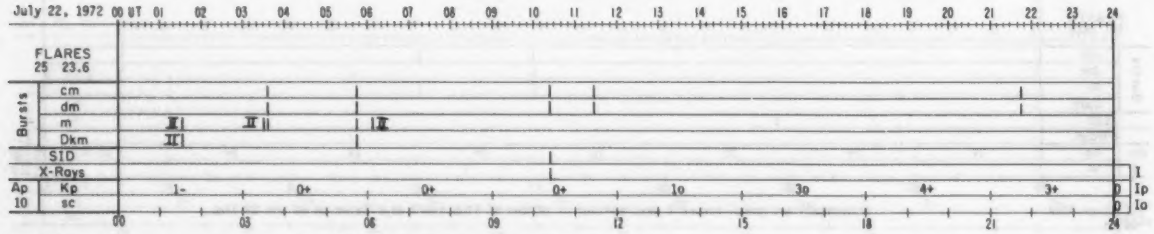
107 10 cm flux
59 Rz
CMP (11969) S21 (18917) S20 (βp 1

Br. green corona 7 days earlier on SE limb, no coronal data 7 days later on W. limb.



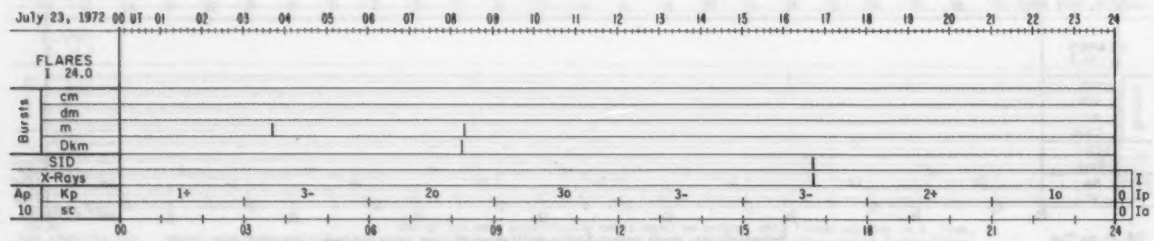
108 10 cm flux
70 Rz
CMP (11962) N13

One of ten most magnetically quiet days; br. green corona 7 days earlier on SE limb, no coronal data 7 days later on W. limb.



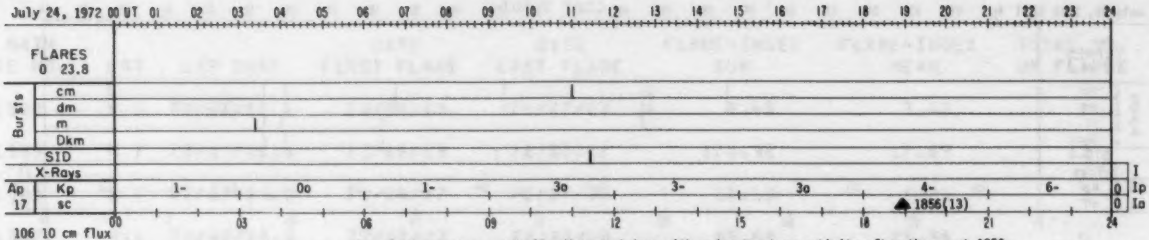
108 10 cm flux
72 Rz
CMP 11964 S02
(11971) S08 (18923) S10 (αp)1

Moderately br. green corona 7 days earlier on SE limb.



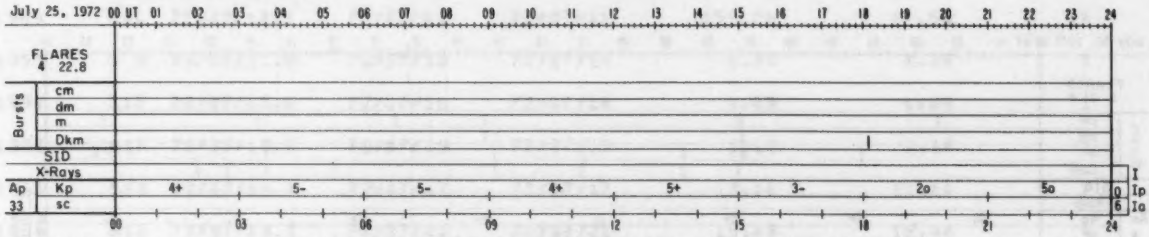
106 10 cm flux
68 Rz
CMP 11963 N12 (4)

One of five most magnetically disturbed days; no coronal data 7 days earlier on E limb, nor 7 days later on W. limb.



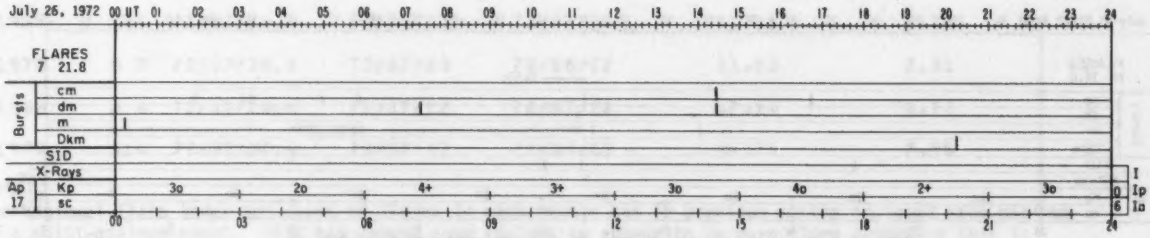
106 10 cm flux
64 Rz
CMP 11965 S10 (18921) S09 (βp)1
(18927) S14 (αp)2 CMP July 23
(18928) S08 (αf)1 CMP July 25

One of five most magnetically disturbed days with moderate storm activity after the sc at 1856; no coronal data 7 days earlier on E. limb, very br. green corona 7 days later on NW limb, moderately br. green corona 7 days later on SW limb.



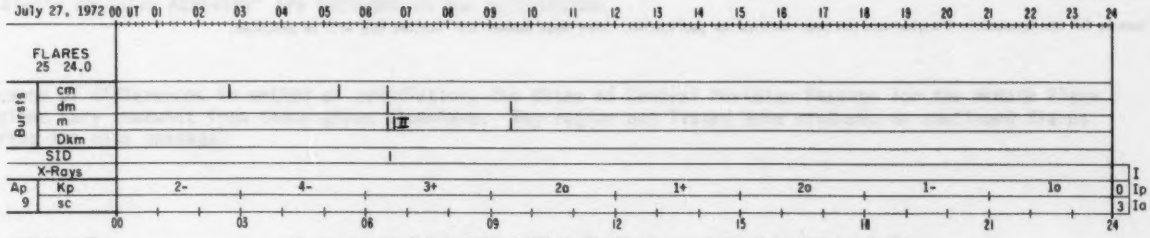
109 10 cm flux
62 Rz

One of five most magnetically disturbed days with moderate activity continuing after the sc of July 24; no coronal data 7 days earlier on E. limb, nor 7 days later on W. limb.



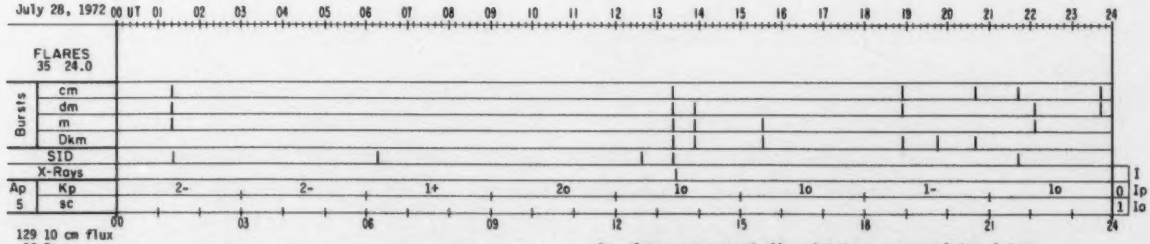
117 10 cm flux
83 Rz
CMP 11972 N07 18924 N07 (βp)4

One of five most magnetically disturbed days, with slight-to-moderate activity; no coronal data 7 days later on W. limb.



123 10 cm flux
82 Rz

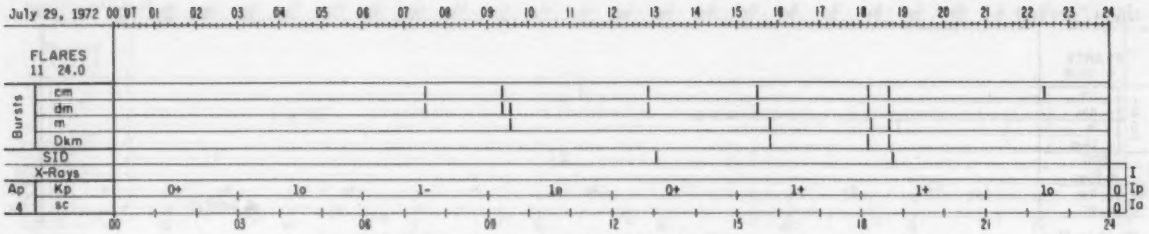
Br. green corona 7 days earlier on NE and SE limb, no coronal data 7 days later on W. limb.



129 10 cm flux
86 Rz
CMP 11968 N03 (2,3B4)

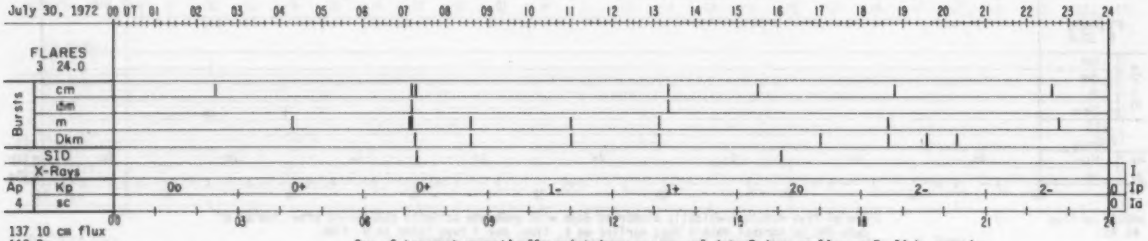
18916 N06 (αp)5 CMP July 27
18919 S03 (αp)1
18925 N08 (βp
18929 N04 (βp)2
18931 N00 (αp)2
18932 S04 (αp)1 CMP July 29
18933 S01 (αp)1 CMP July 29

One of ten most magnetically quiet days; no coronal data 7 days earlier on E. limb, very br. green corona 7 days later on SW limb and br. green corona 7 days later on NW limb.



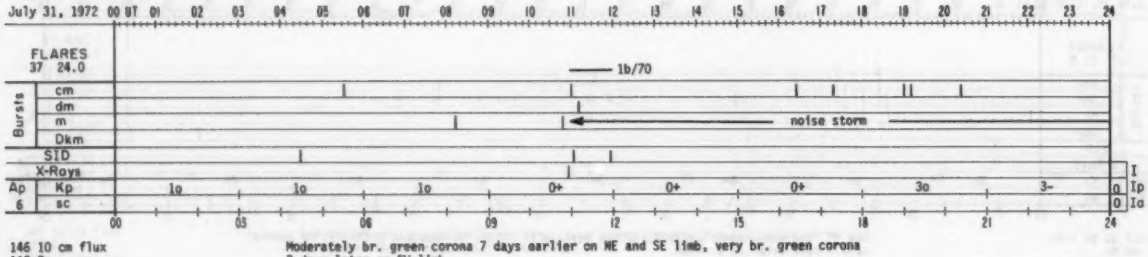
135 10 cm flux
106 Rz

One of five most magnetically quiet days; small proton event which began on July 18 on Explorer 41 reaches a maximum early in day; very br. green corona 7 days later on SW limb and moderately br. green corona 7 days later on NW limb.



137 10 cm flux
112 Rz
CMP 11970 S14 18920 S15 Bf CMP July 29
18922 S13 αp
18926 S15 (αf)2 CMP July 31

One of ten most magnetically quiet days; no coronal data 7 days earlier on E. limb, very br. green corona 7 days later on SW limb and br. green corona 7 days later on NW limb.



146 10 cm flux
115 Rz
CMP (11978) N18

Moderately br. green corona 7 days earlier on NE and SE limb, very br. green corona 7 days later on SW limb.

Indices for the Ionospheric F Region have not been received for publication. When these numbers are received they will be published.

REGIONAL FLARE INDEX

JULY 1972

MC MATH PLAGE NO.	LAT	CMP DATE	DATE FIRST FLARE	DATE LAST FLARE	FLARE-INDEX SUM	FLARE-INDEX MEAN	TOTAL NO. OF FLARES
11950	N 1	72/07/01.1	72/07/03	72/07/03	3.43	3.43	1
11939	N 7	72/07/01.4	72/06/28	72/07/07	170.92	17.09	12
11940	S 7	72/07/03.0	72/06/27	72/07/05	11.15	1.24	2
11947	N10	72/07/08.3	72/07/07	72/07/09	85.68	28.56	5
11957	N13	72/07/08.8	72/07/09	72/07/15	92.77	13.25	7
11949	S10	72/07/10.1	72/07/03	72/07/11	158.26	17.58	14
11959	S 9	72/07/11.6	72/07/15	72/07/15	2.39	2.39	1
11954	S13	72/07/13.6	72/07/16	72/07/16	4.09	4.09	1
11953	N17	72/07/13.7	72/07/19	72/07/19	1.12	1.12	1
11961	S23	72/07/16.9	72/07/17	72/07/17	11.10	11.10	2
11956	N12	72/07/18.3	72/07/21	72/07/21	15.48	15.48	4
11958	S11	72/07/19.6	72/07/14	72/07/22	87.61	9.73	9
11971	S 9	72/07/22.7	72/07/27	72/07/27	4.47	4.47	1
11965	S10	72/07/24.1	72/07/19	72/07/26	11.01	1.38	3
11972	N 7	72/07/26.3	72/07/29	72/08/02	11.53	2.31	2
11968	N 4	72/07/28.1	72/07/22	72/07/28	47.14	6.73	3
11970	S14	72/07/30.4	72/07/23	72/08/03	94.36	7.86	8

Note:
The Regional Flare Index and count of flares in each region has in previous months included each maximum of a multi-maximum event. This has caused some regions to appear to be more flare producing than is probably warranted. Beginning with April 1972 only the principal maximum of a multi-maximum event will be used in the calculation. Also note that only the Confirmed Events as selected for the "I.A.U. Quarterly Bulletin on Solar Activity" are included in the calculation.

Because of differences in method of calculation, the dates of Central Meridian Passage for the McMath Plage Regions vary somewhat from those given elsewhere. Any region not listed here produced no confirmed flares during its disk passage.

REGIONAL FLARE INDEX

SGD 342 Part II (Comprehensive)

MISCELLANEOUS DATA

Contents

	Page
Retrospective World Interval July 26 - August 14, 1972	108
Daily Solar Activity Centers X-ray -- OSO-5 - November 1972	109-110
Cosmic Rays Neutron Monitors -- Dallas - February 1972, Churchill - February-May 1972	111

For explanations of the data contained herein see "Descriptive Text" published as supplement to February 1973 "Solar-Geophysical Data" (Number 342).

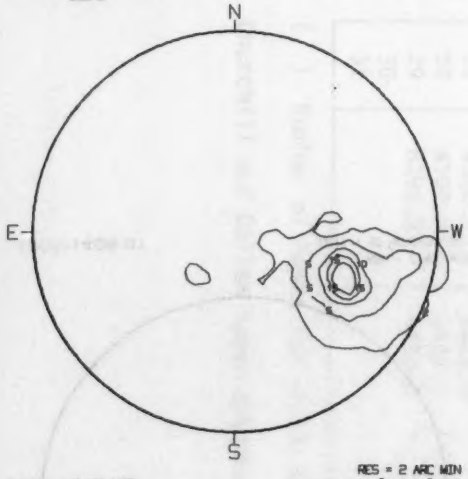
Retrospective World Interval

The period July 26 - August 14, 1972 was recommended as a Retrospective World Interval by Commission III at the XVII General Assembly of the International Union of Radio Science (URSI), Warsaw, Poland, August 20-29, 1972. Commission V of the International Association of Geomagnetism and Aeronomy (IAGA) is planning a Symposium on this time period at the September 1973 meeting of IAGA in Kyoto, Japan.

1 NOV 72

UNIVERSITY COLLEGE LONDON
LEICESTER UNIVERSITY
OSO-5

9·6-11·1Å X-RAYS



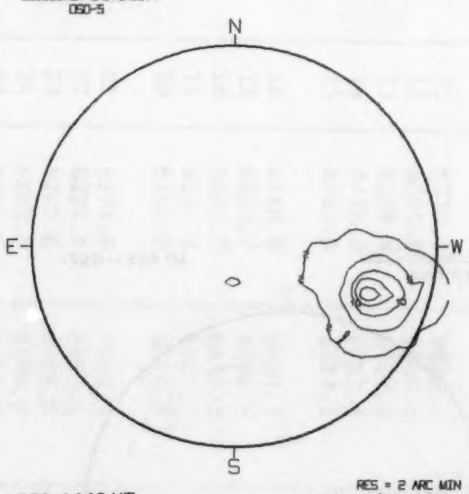
1411-1513 UT

RES = 2 ARC MIN
UNIT = 10^{-6}ERG/CM^2/SEC

2 NOV 72

UNIVERSITY COLLEGE LONDON
LEICESTER UNIVERSITY
OSO-5

9·6-11·1Å X-RAYS



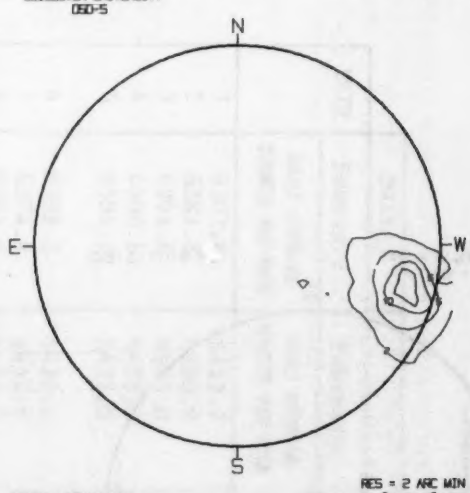
1359-1448 UT

RES = 2 ARC MIN
UNIT = 10^{-6}ERG/CM^2/SEC

3 NOV 72

UNIVERSITY COLLEGE LONDON
LEICESTER UNIVERSITY
OSO-5

9·6-11·1Å X-RAYS



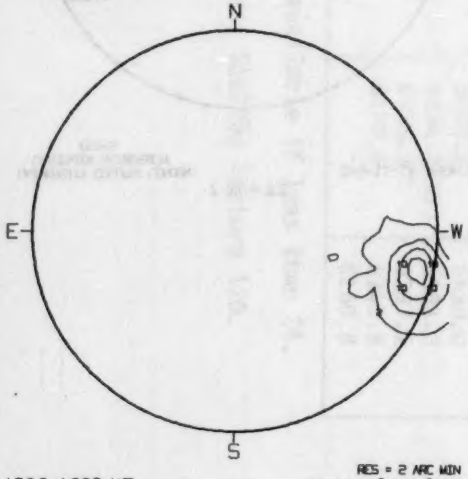
1247-1312 UT

RES = 2 ARC MIN
UNIT = 10^{-6}ERG/CM^2/SEC

4 NOV 72

UNIVERSITY COLLEGE LONDON
LEICESTER UNIVERSITY
OSO-5

9·6-11·1Å X-RAYS



1526-1628 UT

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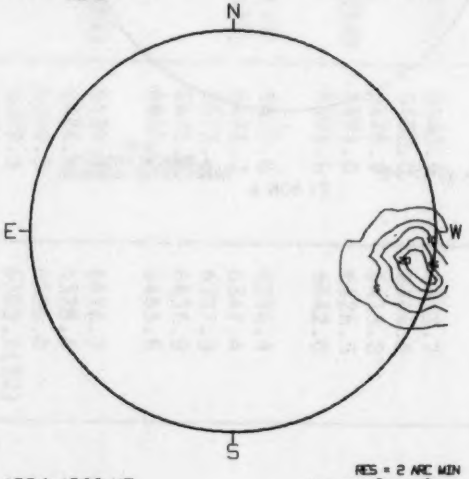
UNIT = 10^{-6}ERG/CM^2/SEC

5 NOV 72

UNIVERSITY COLLEGE LONDON
LEICESTER UNIVERSITY
OSO-5

9·6-11·1Å X-RAYS



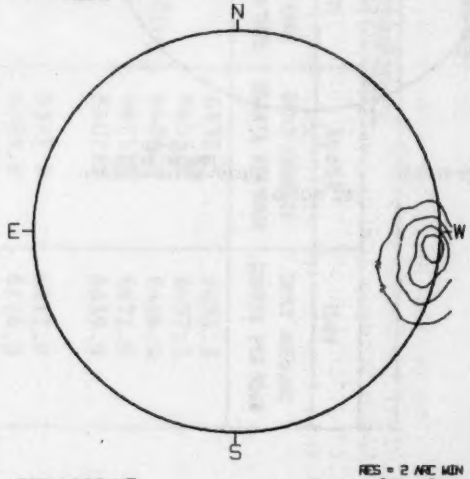
1334-1508 UT

RES = 2 ARC MIN
UNIT = 10^{-6}ERG/CM^2/SEC

6 NOV 72

UNIVERSITY COLLEGE LONDON
LEICESTER UNIVERSITY
OSO-5

9·6-11·1Å X-RAYS



1326-1409 UT

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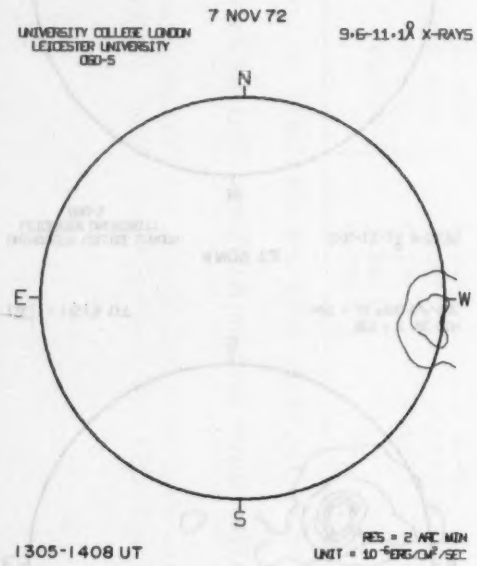
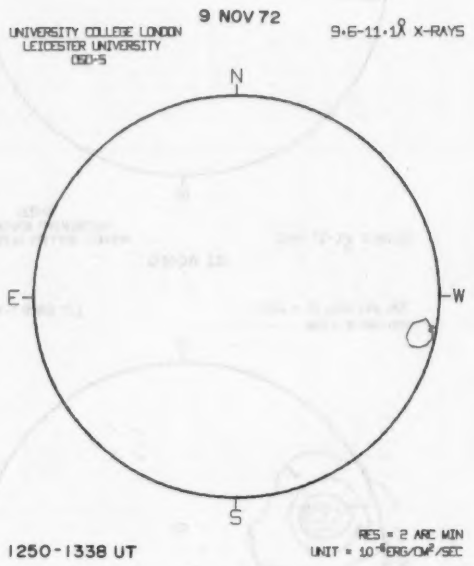
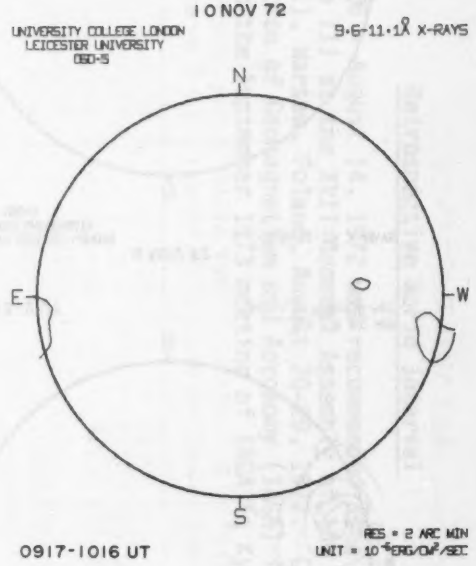

7 NOV 72
UNIVERSITY COLLEGE LONDON
LEICESTER UNIVERSITY
OSO-5
9·6-11·1Å X-RAYS
N
E
W
S
1305-1408 UT
RES = 2 ARC MIN
UNIT = 10⁻⁶ERG/CM²/SEC


9 NOV 72
UNIVERSITY COLLEGE LONDON
LEICESTER UNIVERSITY
OSO-5
9·6-11·1Å X-RAYS
N
E
W
S
1250-1338 UT
RES = 2 ARC MIN
UNIT = 10⁻⁶ERG/CM²/SEC


10 NOV 72
UNIVERSITY COLLEGE LONDON
LEICESTER UNIVERSITY
OSO-5
9·6-11·1Å X-RAYS
N
E
W
S
0917-1016 UT
RES = 2 ARC MIN
UNIT = 10⁻⁶ERG/CM²/SEC

COSMIC RAY INDICES
(Neutron Monitors)

	DALLAS	CHURCHILL			
1972	February	February	March	April	May
	DAILY AVERAGE COUNTS PER HOUR	DAILY AVERAGE COUNTS PER HOUR	DAILY AVERAGE COUNTS PER HOUR	DAILY AVERAGE COUNTS PER HOUR	DAILY AVERAGE COUNTS PER HOUR
1	6301.4	6413.7	6408.8	6430.5	6451.5
2	6281.8	6395.0	6429.4	6453.6	6457.3
3	6294.8	6395.0	6434.9(16)	6489.4	6436.0
4	6300.8	6413.3	6431.2	6475.2	6421.0
5	6305.2	6427.0	6449.2	6407.5	6419.9
6	6308.2	6426.0	6481.8	6371.8	6411.9
7	6374.4	6453.4	6316.7	6363.8	6424.8
8	6363.2	6446.2	6360.0	6390.6	6449.5
9	6383.2	6471.1	6301.9	6413.1	6454.4
10	6362.0	6458.5	6321.1	6444.5	6459.2
11	6310.5	6428.4	6308.3(23)	6445.6	6453.7
12	6305.8	6410.2	6307.2	6482.0	6444.5
13	6259.8	6329.4	6331.5	6476.9	6413.8
14	6176.5	6223.6	6356.6(14)	6491.0	6426.5
15	6164.0	6217.2	6435.9	6491.6	6442.6
16	6180.9	6229.3	6437.9(23)	6499.8	6284.4
17	6243.7	6290.1	6436.3(23)	6491.2	6347.4
18	6190.5	6232.3	6444.8	6472.4	6387.3
19	6117.3	6126.7	6451.4	6476.8	6436.9
20	6140.0	6170.7	6446.3	6467.7	6465.6
21	6176.8	6241.9	6436.1(11)	6439.5	6476.2
22	6224.8	6298.2	6428.9	6424.4	6528.4
23	6242.0	6329.8	6432.3	6340.5	6506.0
24	6280.3	6379.1	6442.2	6409.8	6503.1(22)
25	6246.9	6306.4	6457.0	6435.0	6461.7
26	6276.1	6344.8	6472.5	6455.6	6424.7
27	6322.2	6418.5	6420.7	6470.8	6420.0
28	6309.9	6422.3	6390.9	6454.8(19)	6383.3
29	6299.2	6400.6	6391.0	6458.5	6307.1
30			6389.8	6470.6	6242.8
31			6401.0		6160.8

( ) Number of hours for which data are available if less than 24.

Churchill and Dallas Super Neutron Monitors, Scaling Factors 120.

Publication Notice

WORLD DATA CENTER A for SOLAR-TERRESTRIAL PHYSICS REPORT UAG
(Prepared by World Data Center A for Solar-Terrestrial Physics, NOAA, Boulder, Colorado)

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Upper Atmosphere Geophysics Report UAG-9, "Data on Cosmic Ray Event of November 18, 1968 and Associated Phenomena" compiled by J. Virginia Lincoln, World Data Center A, Upper Atmosphere Geophysics, ESSA, April 1970, single copy price 55 cents.

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Upper Atmosphere Geophysics Report UAG-14, "An Experimental Comprehensive Flare Index and its Derivation for 'Major' Flares 1955-1969" by Helen W. Dodson and E. Ruth Hedeman, McMath-Hulbert Observatory, University of Michigan, July 1971, single copy price 30 cents.

Upper Atmosphere Geophysics Report UAG-15, "Catalogue of Data on Solar-Terrestrial Physics" prepared by Research Laboratories, NOAA, Boulder, Colorado, July 1971, single copy price $1.50. (Supersedes Report UAG-11, June 1970.)

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Report UAG-21, "Preliminary Compilation of Data for Retrospective World Interval July 26 - August 14, 1972" compiled by J. Virginia Lincoln and Hope I. Leighton, World Data Center A for Solar-Terrestrial Physics, November 1972, single copy price 70 cents.

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Report UAG-23, "U.R.S.I. Handbook of Ionogram Interpretation and Reduction", Second Edition, November 1972, edited by W. R. Piggott, Radio and Space Research Station, Slough U.K., and K. Rawer, Arbeitsgruppe für Physikalische Weltraumforschung, Freiburg, G.F.R., November 1972, single copy price $1.75.

Report UAG-24, "Data on Solar-Geophysical Activity Associated with the Major Ground Level Cosmic Ray Events of 24 January and 1 September 1971", Parts 1 and 2, compiled by Helen E. Coffey and J. Virginia Lincoln, World Data Center A for Solar-Terrestrial Physics, December 1972, single copy price (includes Parts 1 and 2) $2.00.

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